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JANUARY · · · · · 1916

BULLETIN OF THE PAN AMERICAN UNION

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[1] Absent.

SR. DR. ALFREDO BAQUERIZO MORENO,

Elected President of Ecuador
January 12, 1916.

Dr. Moreno is a former Vice President of the Republic, and has also been Minister of Foreign Affairs and President of the Senate.

BULLETIN
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CLOSING FEATURES OF THE SECOND PAN AMERICAN SCIENTIFIC CONGRESS.

An account of the opening sessions and a general outline of the activities of the Second Pan American Scientific Congress having appeared in the December number of the BULLETIN, the following résumé embraces brief descriptions of some of the most important events of the closing week, excerpts from a few of the striking addresses made upon the several occasions, a synopsis of the resolu-

MEDAL STRUCK IN COMMEMORATION OF THE SECOND SCIENTIFIC CONGRESS.

This medal in silver was given to each of the delegates to the congress at the closing banquet. Bronze medals were given to the other guests. The medals were made at the United States Mint at Philadelphia. On one side it bears the following legend: "Second Pan American Scientific Congress Dec. 27, 1915–Jan. 8, 1916 Washington U. S. A." On the obverse appears the following: "Friendship Solidarity Progress Through Scientific Achievement."

tions passed as the final act of the congress, and a short account of the excursion to a number of the leading eastern cities as the final event.

On Thursday evening, January 6, President Wilson addressed the the congress at a special session held at Memorial Continental Hall. The occasion was a memorable one, the most representative international gathering ever assembled in the history of the Western Hemi-

sphere being in attendance. On the stage, resplendent with its setting of decorative flags and flowers, were seated the President of the United States; the president of the congress; the Latin American ambassadors and chairmen of the 21 delegations participating in the congress; the chairman of the executive committee of the United States; and the secretary general of the congress. In the boxes flanking both sides of the stage were Mrs. Wilson and members of the White House family party; Mrs. Lansing, wife of the Secretary of State of the United States; the wives of the attending Latin American ambassadors; and representative women of the Daughters of the American Revolution. The auditorium was filled with the delegates and members of their families; members of the Supreme Court, of the Cabinet, and Senators and Members of Congress; members of the diplomatic corps, etc. The galleries were crowded by other Members of Congress of the United States, and other invited guests.

The Chilean ambassador, as president of the congress, introduced President Wilson in a notably graceful and fitting address, and when he concluded prolonged and hearty applause greeted the Chief Executive of the country. Couched in the lucid and forceful English for which the President is noted, his address received the closest attention and he was frequently interrupted by enthusiastic applause. Among the most notable of his utterances upon this occasion are those in which he dealt with the political relations between the United States and the other American Republics, and the necessity for establishing the "foundations of amity so that no one will hereafter doubt them," as set out in the following extract:

If nations are politically suspicious of one another, all their intercourse is embarrassed. That is the reason, I take it, if it be true, as I hope it is, that your thoughts even during this congress, though the questions you are called upon to consider are apparently so foreign to politics, have again and again been drawn back to the political inferences. The object of American statesmanship on the two continents is to see to it that American friendship is founded on a rock.

The Monroe doctrine was proclaimed by the United States on her own authority. It always has been maintained, and always will be maintained, upon her own responsibility. But the Monroe doctrine demanded merely that European Governments should not attempt to extend their political systems to this side of the Atlantic. It did not disclose the use which the United States intended to make of her power on this side of the Atlantic. It was a hand held up in warning, but there was no promise in it of what America was going to do with the implied and partial protectorate which she apparently was trying to set up on this side of the water; and I believe you will sustain me in the statement that it has been fears and suspicions on this score which have hitherto prevented the greater intimacy and confidence and trust between the Americas. The States of America have not been certain what the United States would do with her power. That doubt must be removed. And latterly there has been a very frank interchange of views between the authorities in Washington and those who represented the other States of this hemisphere, an interchange of views charming and hopeful, because based upon an increasingly sure appreciation of the spirit in which they were undertaken. These gentlemen have seen that if America is to come

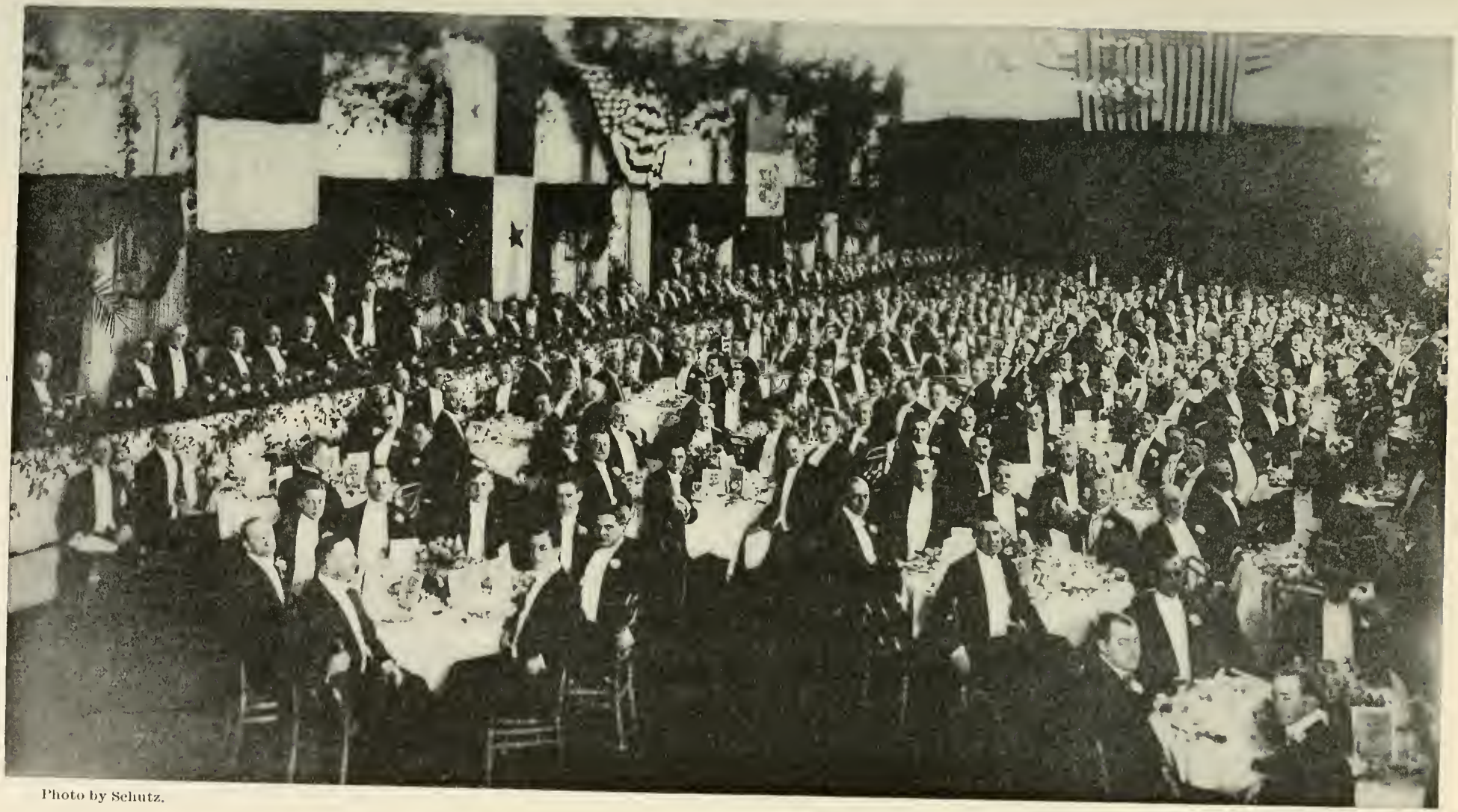


Photo by Schutz.

FAREWELL BANQUET TENDERED DELEGATES TO PAN AMERICAN SCIENTIFIC CONGRESS, NEW WILLARD HOTEL, WASHINGTON, D. C.

On the evening of January 8, 1916, a farewell banquet was tendered the Latin American delegates to the Second Pan American Scientific Congress, Secretary of State Robert Lansing and the members of the United States delegation being the hosts of the occasion. Secretary Lansing, who presided as toastmaster, after a brief but eloquent farewell speech, introduced the other speakers, who were: His Excellency Señor Don Eduardo Suárez-Mujica, the Chilean ambassador and president of the Congress; Judge George Gray, the chairman of the United States delegation; His Excellency Señor Don Julio Acosta, minister of foreign affairs of Costa Rica; His Excellency Señor Don Ignacio Calderon, the minister from Bolivia; Dr. James Brown Scott, secretary of the Carnegie Endowment for International Peace; and Hon. John Barrett, director general of the Pan American Union and secretary general of the Congress.

into her own, into her legitimate own, in a world of peace and order, she must establish the foundations of amity so that no one will hereafter doubt them.

I hope and I believe that this can be accomplished. These conferences have enabled me to foresee how it will be accomplished. It will be accomplished in the first place by the States of America uniting in guaranteeing to each other absolutely political independence and territorial integrity. In the second place, and as a necessary corollary to that, guaranteeing the agreement to settle all pending boundary disputes as soon as possible and by amicable process; by agreeing that all disputes among themselves, should they unhappily arise, will be handled by patient, impartial investigation, and settled by arbitration; and the agreement necessary to the peace of the Americas, that no State of either continent will permit revolutionary expeditions against another State to be fitted out on its territory, and that they will prohibit the exportation of the munitions of war for the purpose of supplying revolutionists against neighboring governments.

You see what our thought is, gentlemen, not only the international peace of America but the domestic peace of America. If American States are constantly in ferment, if any of them are constantly in ferment, there will be a standing threat to their relations with one another. It is just as much to our interest to assist each other to the orderly processes within our own borders as it is to orderly processes in our controversies with one another. These are very practical suggestions which have sprung up in the minds of thoughtful men, and I, for my part, believe that they are going to lead the way to something that America has prayed for for many a generation. For they are based, in the first place, so far as the stronger States are concerned, upon the handsome principle of self-restraint and respect for the rights of everybody. They are based upon the principles of absolute political equality among the States, equality of right, not equality of indulgence. They are based, in short, upon the solid, eternal foundations of justice and humanity. No man can turn away from these things without turning away from the hope of the world. These are things, ladies and gentlemen, for which the world has hoped and waited with prayerful heart. God grant that it may be granted to America to lift this light on high for the illumination of the world.

Upon the occasion of its final session January 8, 1916, the congress summarized its work and outlined its recommendations in the form of a body of comprehensive resolutions. Omitting the first sections of the preamble, which cited the facts in regard to the calling of the congress, its purpose, names of the delegates of the various countries, etc., the following is a synopsis of the resolutions passed by a unanimous vote:

Whereas the said congress, in accordance with its high aims and purposes, among others to increase the exchange of knowledge and bring about a better understanding of the ways in which the several American Republics can work to the advancement of science, the increase of culture, and the promotion of trade, commerce, and mutual helpfulness, considered the following program of subjects, divided according to appropriate sections and subsections; and

Whereas the Second Pan American Scientific Congress, having carefully considered the foregoing subjects in a series of meetings held from December 27, 1915, until January 8, 1916, adopts the following recommendations:

I. That the various American Republics arrange for joint action in the matter of *archæological exploration*, in order to formulate uniform laws relating to the survey, exploration, and study of archæological remains and laws to effectually safeguard such from wanton destruction or exploitation.

II. That the Government of the United States be requested to bring to the attention of the other Republics, through their respective Governments, and thus to the

Photo by Harry B. Leopold.

THE EXCURSIONISTS IN BALTIMORE.

The delegates to the Second Pan American Scientific Congress and members of their families were received at the city hall in Baltimore by Acting Mayor John Hubert, who, in the absence of Mayor Preston, extended the welcome on behalf of the city. Mr. Hubert may be seen in the center of the picture, standing under the chandelier.

institutions and public thereof, the importance of promoting *archæological research* and the building of national educational museums for the preservation of the data and material collected.

III. That the American Republics undertake as soon as possible (*a*) Accurate *geodetic measurements* to determine national and international limits, and to aid in determining the true shape of our planet. (*b*) Magnetic measurements of their respective surfaces, and the establishment of permanent *magnetic observatories.* (*c*) To extend their *gravimetric measures* to regions where such have not been taken.

IV. That the nations of the American Continent establish an *international triangulation;* and that they also reach an agreement for the purpose of creating an office or congress of cartography and geography.

V. That steps be taken to bring about in all the Republics a general use of the *metric system* of weights and measures.

VI. Embodies recommendations relative to the installation of *meteorological organizations* to serve as a basis for the establishment of a Pan American meteorological service.

VII. That an international Pan American committee be appointed to study and report upon the question of establishing a *uniform gauge for railways.*

VIII. That a Pan American committee on *radio communication* be appointed to assist in the development of the science and art of radio communication over long distances.

IX. Recommends a cooperative study of *forest conditions* and forest utilization through governmental agencies and the publication of data thereon.

X. Recommends the appointment of a commission to investigate and study existing laws affecting the use of water, conservation of surface and underground waters for *irrigation* or industrial purposes, etc., and to suggest laws or regulations in the interest of *general industry, navigation,* and *commerce.*

XI. Suggests that the question of the *reclamation of arid lands* should receive the immediate and careful consideration of the several Governments of the Americas.

XII. That each country should maintain a well-organized *live-stock sanitary service* comprising officers, field inspectors, and laboratory force. The resolution embodies numerous details relative to the enforcement of live-stock sanitary laws in order to prevent the exportation, importation, and spread within the country of infectious, contagious, or communicable diseases by means of animals, animal products, ships, etc., and enjoins cooperation, exchange of information, and mutual aid among the services of the several American countries.

XIII. That as soon as possible a Pan American *plant-protection conference* be convened, the delegates to be technical experts from the several American countries, to discuss suitable legislation relative to the establishment of scientific bureaus and to recommend such cooperative research work and control of plant introduction as may be advisable.

XIV. Recommends the distribution of information relative to *agricultural production* of the several countries and of the publications relating thereto.

XV. Recommends that important details of the lives of the *liberators and statesmen* of the continent should be included in the courses of study in the schools of the American Republics.

XVI. That there be established in the *universities* of the United States chairs of the history, development, and ideals of the Latin-American peoples, and in the universities of Latin America similar chairs of instruction in regard to the people of the United States.

XVII. That *Spanish be taught* more generally in the schools of the United States and English more generally in those of the Latin American Republics, and that both languages be taught from the point of view of American life, literature, history, and social institutions.

XVIII. Recommends the inauguration of the *study of sociology* in all American universities.

XIX. Advocates the *interchange of educators* of all grades, and of students of universities and normal and technical training schools.

XX. Suggests that the presidents of leading architectural societies of this hemisphere be requested to communicate with each other for the purpose of forming a *Pan American federation of architectural societies*, and that such federation should hold conventions in different countries at stated periods.

XXI. Recommends that there be published a series of volumes entitled the "*Pan American Library*," with the object of popularizing, in the several languages of the continent, the best scientific, literary, and artistic works of American authors.

XXII. Recommends the organization, in connection with the Pan American Union, of a *department of education* which shall be intrusted with the publication in English, Spanish, and Portuguese, of such works on education as are of importance to the American countries; keep the different Republics in touch with educational progress; promote the study of educational problems from both national and American standpoints in each country; and to facilitate the interchange of ideas and information among the teachers of the continent.

XXIII. To increase the facilities for the study of *international law* the congress recommends that certain steps be taken to improve and enlarge library and reference facilities, such as—

(*a*) That a bibliography of international law and related subjects be published with names of publishers and prices where practicable;

(*b*) The publication of a carefully prepared index or digest of the various heads and subheads in international law, with references to all standard authorities upon each head;

(*c*) That all documents of State, both foreign and domestic, bearing upon international law, including treaties, documents relating to arbitration, announcements of policy, etc., be published in convenient form; and that aid of ministers of foreign affairs be solicited in securing such material.

(*d*) That a law reporter of international cases be issued.

2. That steps be taken to extend the study of international law by increasing the number of schools at which courses in the subject are given and by diffusing a knowledge of its principles in the community at large; and

(*a*) That as the idea of direct government by the people grows it becomes increasingly essential that the leaders of opinion in each community be familiar with the rights and obligations of States with respect to one another, and hence it becomes a patriotic duty of our educational institutions to give as thorough and extensive courses as possible in this subject.

(*b*) That a course in international law should consist of systematic instruction extending over at least a full academic year, divided between international law and diplomacy.

(*c*) That prominent experts in international law be invited from time to time to lecture upon the subject at the several institutions.

3. With the view of placing instruction in international law upon a more uniform and scientific basis, the congress makes extensive recommendations the salient features of which are as follows:

(*a*) In teaching the subject emphasis should be laid on the positive nature thereof and the definiteness of the rules. * * * The interest of students and their enthusiasm can best be aroused by impressing upon them the evolutionary character of the rules of international law. Through such a presentation of the subject the student will not fail to see how the development of positive rules of law governing the relations between States has contributed toward the maintenance of peace.

Photo by Wilson Bailey.

THE EXCURSIONISTS AT THE UNIVERSITY OF PENNSYLVANIA.

A few of the tourists at the entrance of the Houston Club, University of Pennsylvania.

(*b*) To emphasize the positive character of international law, the widest possible use should be made of cases and concrete facts in international experience. The marshaling of such facts in such a way as to develop or illustrate general principles lends a dignity to the subject which can not help but have a stimulating influence. Hence international law should be constantly illustrated from sources which are recognized as ultimate authority, such as (*a*) cases both of judicial and arbitral determination; (*b*) treaties, protocols, acts, and declarations of epoch-making congresses, such as Westphalia (1648), Vienna (1815), Paris (1856), The Hague (1899 and 1907), and London (1909); (*c*) diplomatic incidents ranking as precedents for action of an international character; (*d*) the great classics of international law.

(*c*) In the teaching of the subject care should be exercised to distinguish the accepted rules of international law from questions of international policy.

(*d*) In a general course on the subject the experience of no one country should be allowed to assume a consequence out of proportion to the strictly international principles it may illustrate.

4. The Congress recommends that a major in international law in a university course leading to the degree of doctor of philosophy be followed, if possible, by residence at The Hague and attendance upon the Academy of International Law which is to be established in that city; * * * and that as many fellowships as possible should be established in the academy at The Hague.

5. Recommends that the study of international law be placed on a plane of equality with other subjects in the curriculum of colleges and universities, and that professorships or departments devoted to its study should be established in every institution of higher learning.

6. Requests that all law schools which now offer no instruction in international law add to their curriculum a thorough course in that subject.

7. Recommends that institutions where instruction in international law is lacking take steps toward providing such instruction by visiting professors or lecturers, this instruction to be given in courses, and not in single lectures, upon substantive principles and not upon popular questions of momentary interest, and in a scientific spirit, not in the interest of any propaganda.

8. Recommends the establishment in collegiate institutions of specialized courses in preparation for the diplomatic and consular services.

9. Recommends that the study of international law be required in specialized courses in preparation for business.

10. That in the study and teaching of international law in American institutions special stress be laid on problems affecting the American Republics and upon doctrines of American origin.

XXIV. Embodies a special resolution relative to the formal inauguration, under the auspices of the Congress, of the *American Institute of International Law*, founded in Washington, D. C., October 12, 1912, and extends to the Institute a cordial welcome into the circles of scientific organizations of Pan America, and records the sincere wish of the Congress for a successful career and the achievement of the Institute's highest aims, etc.

XXV. Recommends to all educational establishments of America the *special study* of the constitutions, laws, and institutions of the Republics of this continent.

XXVI. Recommends to the various universities of America that a *comparative study of judicial institutions* be undertaken; also to facilitate the knowledge and solution of American private international-law problems, and to seek as far as possible uniformity of legislation and jurisprudence.

XXVII. That all *bar associations* of American countries be urged to exchange among themselves law books and publications affecting the legal profession, with a view to broadening and rendering closer their mutual relations.

XXVIII. Recommends that a compilation of the *mining laws* of the American countries be made in English, Spanish, and Portuguese, with a view to the reciprocal improvement of the laws of each individual country. Also, that the several American governments appoint a committee to consider the uniformity of mining statistics, and to make recommendations to their respective governments for the systematizing, simplifying, and standardizing of such statistics.

XXIX. That all American countries inaugurate a plan of *malaria eradication* and control based upon the recognition of the principles that the disease is preventable to a much larger degree than has thus far been achieved, and that the education of the public in the elementary facts of malaria is of the highest importance to the countries concerned.

XXX. That the countries in which *yellow fever* prevails, or is suspected of prevailing, are urged to enact such laws for its eradication as will best accomplish that result. Also that European colonies in America be invited to adopt measures for its elimination.

XXXI. That such of the American Republics as have not done so already should ratify the international conventions concerning the *white slave trade*.

XXXII. That there be established uniform methods, documents, statistics, port charges, administrative regulations, and classifications, as employed in *international trade* between the North, Central, and South American countries. Also that provision be made for the collection and study of material on this subject through some organization which will insure a thorough and scientific investigation of the problem.

XXXIII. That it is desirable to make a scientific study of the *systems of taxation* existing in the different American Republics.

XXXIV. That the Governments deriving important revenues from the consumption of alcohol should organize their systems of taxation so that the economic interests be subordinated to the higher interests of a social and moral order, which tend to the *suppression of alcoholism*.

XXXV. That it is advisable that the different *monetary systems* of the Republics be studied from a scientific point of view and in connection with the experience of the various American countries in such matters.

XXXVI. That the American Republics make uniform, as far as possible, the basis and adopt a common time for the taking of census, and adopt uniform principles in *commercial and demographic statistics*.

In conclusion, the congress specially recommends, for execution by the present Pan American Union or by means of any other institution in actual existence or to be established, the following propositions:

The establishment of an *intellectual Pan American union* to unite the various associations of different character—technical, medical, legal, etc.—divided into sections according to groups that may be deemed convenient, such as a university section, a library section, etc. The details thereof are contained in the records of the congress in the form of four propositions dealing with the proposed union.

The congress requests the Government of the United States to transmit the foregoing resolutions and recommendations contained in the final act to the Governments of the American Republics participating in the congress, and suggests that a Government specially interested in any one of the resolutions or recommendations should take the initiative to carry the same into effect.

In pursuance of the proposition made by the delegation of Chile, it was unanimously resolved that the next conference of the *Third*

Pan American Scientific Congress would take place in the city of Lima, Peru, in 1921, the one hundredth anniversary of the independence of Peru, and for that purpose the following gentlemen, Messrs. Dr. Don Javier Prado y Ugarteche, rector of the University of San Marcos, Lima; Dr. Don Manuel Vicente Villaron, Lima; and Dr. Don Alejandro Deustua, Lima (who is a member of the present delegation of Peru), were appointed to constitute the committee on preliminaries which is to take charge of the organization of said congress.

Upon motion of his excellency the ambassador of Brazil, seconded by the minister of Cuba, the report was adopted by a unanimous vote.

Before final adjournment Judge George Gray, chairman of the delegation on the part of the United States, presented the following resolution:

Resolved, That the official delegation, on the part of the United States, expresses its most earnest appreciation of the acceptance by all the other American Governments of the invitation of the United States Government to participate in this congress, and of the eminent and representative character of the delegates and members who are in attendance from these countries, and that it desires to emphasize the sympathy, cordiality, and unanimity of opinion and sentiment which the delegates of the visiting countries have manifested in all their relations, not only with each other but with the United States delegates, and in conducting the discussions and reaching the conclusions of the congress, thus showing a spirit of practical Pan Americanism which deserves the approval of the Governments and peoples of all the participating nations, and which will give this congress a notable position in the history of Pan American gatherings.

He was followed by Dr. Santos A. Dominici, minister of Venezuela and chairman of the Venezuelan delegation, who introduced the following resolution:

Resolved, That the congress hereby expresses its deep appreciation of the hospitality, courtesies, and attentions shown the delegates and members from the visiting countries by the Government and delegates of the United States and the people of Washington, and that it desires to record its profound satisfaction with the efficient work done by the executive officers and staff of the congress, including especially His Excellency Señor Eduardo Suarez-Mujica, the Chilean ambassador, president of the congress; Hon. William Phillips, Third Assistant Secretary of State of the United States, chairman of the executive committee on the part of the United States; Dr. James Brown Scott, secretary of the Carnegie Endowment for International Peace, vice chairman of the committee; Hon. John Barrett, Director General of the Pan American Union, secretary general of the congress; Dr. Glen Levin Swiggett, assistant secretary general; the chairmen of the sections; the assistant secretaries of the sections and their respective assistants; and the interpreting and stenographic staff, who have all labored loyally and faithfully for the success of the congress.

Both of these resolutions were unanimously approved by a viva voce vote of the congress. The closing feature of the program was the final address of the president of the congress, his excellency the ambassador of Chile, who concluded by adjourning this session of the Second Pan American Scientific Congress until the year 1921, at Lima, Peru.

Photo by Caywood-Drucker.

LUNCHEON TENDERED BY THE PHILADELPHIA CHAMBER OF COMMERCE.

At Philadelphia the excursionists were tendered a luncheon at the Bellevue-Stratford Hotel, the speech of welcome being made by Hon. Thomas B. Smith, mayor of the city. After the luncheon the visitors were taken on a sight-seeing tour of the city, and in the evening were guests of the mayor at a performance of Mozart's "The Magic Flute" at the Metropolitan Opera House.

In many respects the crowning event of the congress was the farewell banquet given on Saturday night, January 8, to the Latin American delegates by Secretary of State Lansing and the delegation on the part of the United States. The ballroom on the tenth floor of the New Willard Hotel was beautifully and appropriately decorated for the occasion. Displayed on the walls in graceful festooning were the flags of the 21 American Republics, which, in turn, were set off by graceful floral decorations.

Along the west side of the room was a long table at which the Secretary of State presided, with the Brazilian ambassador upon his right and the Chilean ambassador at his left. Then, on either side, were seated the diplomatic representatives of the other Latin American countries and the chairmen of the visiting delegations. The great body of guests were placed around 40 small tables arranged in parallel rows. In all, nearly 400 guests were present.

The speaking of the evening was begun by Secretary Lansing, who presided, in a graceful welcome to the guests and a tribute to the work of the congress. He was followed in turn by the president of the congress, His Excellency Sr. Don Eduardo Suarez-Mujica, the Chilean ambassador; Judge Gray, the chairman of the United States delegation; His Excellency Sr. Don Julio Acosta, the minister for foreign affairs of Costa Rica on special mission; His Excellency Sr. Don Ignacio Calderon, the minister of Bolivia; Dr. James Brown Scott, secretary of the Carnegie Endowment for International Peace; and John Barrett, secretary general of the congress.

Secretary Lansing spoke briefly as follows:

Gentlemen, I had the privilege of addressing this great congress at its opening session, and now I again have an opportunity of saying a few words at this last gathering.

At the opening session I expressed the hope that Pan America would be the keynote of this congress, and now to-day, after two weeks of your sessions, I can say that my hope has been realized and more than realized, and yet at this time of congratulations there is, I am sure, with us all a feeling of regret that the friends we have made, the close intimacy in which we have been for these past two weeks, must come to an end, and those that have been here are to separate and go their several ways.

I wish to assure you, our visitors from the other Republics, that it has not only been an honor but a pleasure to have the opportunity of entertaining you, officially and in our homes. We have come to know each other better than we knew each other before. We have, I feel, formed a friendship that is new in the Americas. We shall not forget you and we hope you will not forget us.

Every man loves his native land above all others. We call that patriotism, and the destiny of a nation is in the hearts of its people, and yet how can a man's patriotism, even though he give his life for his country, be better exemplified than in strengthening the bonds which are uniting our Republics, which are growing stronger as the days go by, and which I trust will ever grow stronger with the years.

Gentlemen, when you return to your homes, I hope that each man will act as an apostle of Pan Americanism, teaching his fellow citizens the truth as to other Republics, wiping away every idea of suspicion or doubt as to their motives or their intentions or their willingness to help their fellow Republics. Pan Americanism—and

you see I must return to that theme always—Pan Americanism ought to be our guide in all our intercourse, the guardian of our mutual interests, and the hope of America for all time.

His excellency, the Chilean ambassador, Sr. Don Eduardo Suárez, who as president of the scientific congress followed the Secretary of State, and, speaking on behalf of the assembly as a body, responded with a sincere expression of gratitude for the hospitality extended to the congress both officially and by the private society of the land, and in a charming manner referred to the "interesting and most enlightened feminine element who, with their inexhaustible kindness, have honored the members of this congress." The ambassador thanked the United States Government for "having taken advantage of this opportunity to increase the currents of Pan Americanism and to impress the international policy of America with a stamp of closer and more frank confraternity," and continued as follows:

In this wise there is being formed for the nations of the three Americas a common atmosphere; there is being built a sort of new home—the Pan American home—under whose shadow and through the bonds established by the drawing together of individuals we are to profit, without any hindrance on behalf of our common development, by the natural resources of our countries, by the well-proven energy of our races, and by all the means that the stupendous progress of the world during the last fourth of a century offers to human life, peace, and happiness.

Let us hope that educational enterprise and labor will ultimately place our countries upon the same moral and intellectual level; that the great material agencies of communication and rapprochements—the railroad and the steamer—will link our cities and multiply our commerce; that the indefatigable scouts of public health will extend the blessings of sanitation and hygiene to the remotest and most dangerous corners in the continent. Let us hope that the sense of justice and right shall rule unhindered among our peoples and Governments; let us hope that the great discoveries with which talents such as Edison's have, during recent times, enriched the fields of electrical, mechanical, and chemical application, shall be fruitfully utilized as instruments for the achievement of our material progress, instead of being used, as is now unfortunately the case across the waters, in precipitating the dissolution of progress and the destruction of men and of nations.

He concluded by proposing a toast in honor of the President of the United States as the "highest symbol of the country which so fraternally has been entertaining us."

Following the address of the ambassador from Chile the Hon. George Gray, chairman of the United States delegation, delivered a farewell address to the foreign delegates. In the course of his remarks he dwelt on the contrast offered in the existing cordial relations between the American Republics on the one hand, and those at present obtaining between the nations of Europe on the other, incidentally touching on the matter of American neutrality and the duties to civilization and humanity which have devolved upon the people of the Americas, as follows:

It is for us of the Pan American States to see that our judgments are not confused by this anarchy of war. We have not contributed directly or remotely to the causes which have brought it about. It is our right and our duty as States to be neutral and

to maintain and defend our neutrality. I do not, of course, mean neutrality of public opinion—there can be no such thing as moral neutrality—the free and intelligent peoples of these Americas can not be expected to sit as silent and indifferent spectators in the world's great amphitheater and view the enactment of the bloodiest drama in all history and not raise their voices in protest against its unspeakable and causeless horrors. We must do something to vindicate the thought and purpose of the peace-loving Pan American people to resist the great tide of lawlessness and savagery that seems now to threaten to engulf the world—by upholding the standards of civilization, peace, and humanity. Unembarrassed as we are by dynastic ambitions and breathing an air free from the baleful poison of militarism we may, in God's providence, be enabled to serve the cause of humanity by our example, and to spread a gospel not of hate but of friendliness and good will to all the nations of the world. Not with unintelligent complacency, but with all reverence and humility, may we not stand so together in this great world crisis and maintain those great principles of justice and humanity which can not be effaced from the hearts of men?

In concluding his eloquent address Judge Gray said:

Never since these continents were first pressed by the feet of white men has such an opportunity come to the peoples of North, Central, and South America to unite for their own advancement and for the blessing of the world. We need no formal treaties to impel us to the unity of thought and action that will make the injury of one be the injury of all. It is for us, of all the world, to make a moral salvage of Christian civilization, to paraphrase the words of our President—the Americas ask nothing for themselves except what they have a right to ask for humanity itself.

Friendliness and good will have been the atmosphere in which this congress has worked for the benefit of humanity. It is only for the peoples of the two continents to will to be friends and the work is accomplished. Time and circumstance have drawn us together. We can not ignore the community of our interests if we would, nor can we neglect the duty of cooperation which that community imposes upon us.

With the performance of that duty of cooperation will come, I am sure, the mutual respect upon which alone true friendship can be founded. On such foundation I look forward hopefully to a union of the peoples of Pan America more enduring than any that come from treaties or laws.

Gentlemen of the congress, your meeting in this Capital City has brightened our hope for the future, and on behalf of the United States delegation I bid our brethren of Latin America a regretful and affectionate farewell.

The next speaker, Sr. Don Julio Acosta, minister for foreign affairs of Costa Rica and representing that Republic on special mission, spoke in Spanish, the following being a free translation of his remarks:

This banquet marks a solemn hour in the history of the Americas, occurring as it does at the close of one of the most important scientific congresses, whose sessions have just terminated, that have ever been held by the free nations of the Western Hemisphere. The results can not be long in becoming evident, because this policy of true American solidarity has for a number of years entered deeply into our hearts, and each day we feel more and more impelled to lend it our undivided support and to consider it a lofty ideal to which we should devote the energy of our lives.

The strengthening of the bonds of amity and interest is being slowly but surely realized. This congress has already greatly advanced in this direction, but much is still left to be done. The congress urges not only encouragement in the economic development of the Latin-American Republics, but also the immediate diffusion of education among the masses in order to properly prepare us for the new program which present world events will impose upon us as a law of progress and social well-being.

Photo by Edward Durell. Courtesy of Princeton Pictorial Review.

THE EXCURSIONISTS AT PRINCETON UNIVERSITY.

The party entering Nassau Hall, where they were welcomed by President Hibbon of the university. After the exercises the visitors were entertained a luncheon by the university in Proctor Hall.

I think that this distinguished group of the delegates of the Americas which has assembled in Washington will have understood, from what I have observed, that a knowledge of the English language in the Latin-American Republics and of Spanish and Portuguese in the United States will be the most powerful lever in the establishment of a perfect understanding among the nations of the Americas. By acquiring these languages we will be enabled to read the minds of the different races who inhabit this hemisphere and attain that complete unity of aspiration which will come as a consequence of a perfect harmony and a stronger confidence in the destiny of the Americas. A most favorable impression has been made upon me whenever a distinguished lady or an intelligent girl residing in Washington has spoken to me in the language of my country.

We shall not easily forget this splendid and impressive assembly in which all of our countries were represented nor that manifestation of enthusiasm of the nations to the south of the United States for the generous hospitality which this great people and their Government have shown to the delegates; and the noble thoughts of President Wilson in his address of the 6th instant have permitted us to feel that American fraternity is not an idle dream but that it is, on the contrary, the basis of our future, and that we should carry to our homes, more or less distant, the warmth of the lofty and virile ideals in the midst of which the memorable sessions of the Second Pan American Scientific Congress were held.

Gentlemen, I drink to the happiness of the Americas, to the diffusion of public instruction in the humblest of American homes, and to that true loyalty which must ever reign in the relations of our peoples in their dealings with each other.

His excellency, Minister Calderon, of Bolivia, responding for the delegations from Latin America, spoke, in part, as follows:

The astronomers that, invading the limitless space, are patiently trying to penetrate the mysteries of creation, tell us that in the perpetual evolution of the myriads of stars there is a constant and regular process by which shapeless nebulæ evolve in perhaps millions of years into a compact body like our planetary system, and that all those wonderful and marvelous transformations take place as orderly and regularly as day follows night.

When man as a free agent chooses to submit himself to the moral laws that are as permanent and unchangeable as all natural laws, the result is peace and harmony. In the social and political evolution of the nations democracy is the supreme expression of justice and right, the fundamental basis for peace and happiness.

The New World has discarded all the artificial and degrading impositions originated in times when the self-respect and the rights of man were crushed under the doctrine of the divine right of kings and the creation of nobility, supported by might and the spoliation of the many for the benefit of the few. America has reestablished mankind to the fullness of its rights.

It is my profound conviction that our progress and social advance under the great principles of justice, equal rights, and duties for all is promoting the future peace of the world.

Civilization and progress are complex facts and the result of coordinate efforts for the welfare of mankind inspired in rightfulness and sympathy. We live in a time when the truth is better understood that the advance of the human race represents the sum total of the well-being of one and every nation. The whole trend of our civilization, the constant mastery of the great elements of nature, the increasing output of manufacturing, the almost obliteration of time and space by the use of steam and electricity, are telling us that no nation can grow and develop only within itself; that the universal exchange of thoughts, of the products of industry, and the expansion of capital are as necessary to the world's progress as food to the human body.

Gentlemen, this congress marks an epoch in the relations of our Republics. It met in a historic moment. By its contributions to the store of knowledge it has earned the respect of the men of science, and by recognizing the great principle of Pan Americanism it has taken the most forward step toward the solidarity of America. The President in his message to Congress has masterfully expounded the meaning of that great doctrine, which excludes no man, threatens no country, but is the culmination of that great universal yearning for freedom, for peace, justice, and amity.

Speaking for the Carnegie Endowment for International Peace, Dr. James Brown Scott, the secretary, told the guests of the satisfaction felt by that organization because so many delegates, eminent scientists, diplomatists, and others had accepted the invitation of the foundation to come to Washington to attend the Congress. In expressing particular thanks to the countries represented and their delegates, Dr. Scott said:

I beg to say on behalf of the endowment how grateful we likewise are to the ministers of foreign affairs of the American countries for the very great aid they gave us in our endeavor to select representative scholars, economists, and publicists, who might properly claim to represent their best thought and achievement.

And, finally, I should like to express the gratitude that the authorities of the endowment feel toward these gentlemen of South America and of Central America who have traveled so long and so far in order to be with us and by their presence to add not merely to the interest but to the value of the proceedings of this congress.

Dr. Scott declared that the great value of such a gathering, over and above the actual work of the congress, is the personal contact and intercourse which lays the foundations of future friendships, loyal and harmonious cooperation, and better understandings. Along this thought he said:

In times past one of the greatest troubles was—and in this regard it can hardly be said that we have separated ourselves from times past—that the peoples of different countries were strangers and that the word stranger in the remote past was very much akin to enemy. The peoples of one country disliked the peoples of another country, largely because they did not know them. If they had known them they would have found under the surface and at heart that they were very much like themselves, and in coming into contact with them and in knowing them they would have felt themselves inevitably drawn together. To the Greek the foreigner was a barbarian; to the Roman the foreigner was an enemy, and so it has been almost to our own day.

Little by little, however, by intercourse and by personal friendships, we are breaking down the barriers that formerly separated us; we are learning to know one another; we are seeing that, notwithstanding outward differences, our ideals are much the same, and that in the stranger of to-day, we greet a possible friend of the morrow.

In conclusion, Dr. Scott said:

There is a very apt French expression which I should like to quote and to make my own, for it expresses in some four or five words all that I would like to say, more than I have said, and indeed more, I believe, than anyone can reasonably hope to say on an occasion of this kind. The expression is *Tout comprendre, c'est tout pardonner*—to know is to pardon—to understand is to forget, is to forgive, and I am quite sure, gentlemen, that if we will all give ourselves the trouble to understand each other, those of the South to understand their brothers of the North, and those of the North to understand their brothers of the South, there will be no longer misunder-

Photograph by Drucker & Co., New York.

BANQUET TENDERED BY THE PAN AMERICAN SOCIETY OF THE UNITED STATES IN HONOR OF THE DELEGATES TO THE SECOND PAN AMERICAN SCIENTIFIC CONGRESS AT THE WALDORF-ASTORIA, NEW YORK CITY JANUARY 12, 1916.

standings of an international character between us, and that we shall have laid the foundations for a permanent peace, because it will be a peace bottomed upon understanding and mutual respect.

Secretary Lansing then called upon Director General Barrett, and the latter, in his capacity of secretary general of the congress, stated that the success of the gathering was due to the splendid work of the chairman of the executive committee, Hon. William Phillips, the Third Assistant Secretary of State. Mr. Barrett took advantage of the occasion to express his profound appreciation of the loyal cooperation, faithful labors, and efficient aid which he had received throughout the congress from the entire organization staff. He expressed his keen satisfaction and pleasure that the growing friendly relations between the American nations, the closer union of their interests and activities are so generally appreciated by all, especially so since in these manifestations of closer Pan American relations he sees the fruition of a labor to which he has devoted so many years.

A feature of the banquet was the distribution of medals, silver to the delegates and bronze to the guests, struck off by the United States mint at Philadelphia in commemoration of the Second Pan American Scientific Congress bearing the words on one side, "Second Pan American Scientific Congress, Dec. 27, 1915–Jan. 8, 1916, Washington U. S. A.," and on the other the legend, "Friendship Solidarity Progress Through Scientific Achievement," and figures representing North and South America with hands clasped over a relief map of North and South America with an outline of the Pan American Building at the base.

The concluding feature of the plan arranged for the entertainment of the foreign delegates to the congress consisted of an excursion to several eastern cities and universities. Lack of space preventing a detailed account, the following summary is but a brief outline of the principal features of the trip.

Leaving the Union Station at Washington in a special parlor car train of nine coaches on the morning of January 10, the party arrived at Baltimore at 11 a. m. Here they were met by a delegation from the Baltimore Chamber of Commerce, and after a pleasant automobile drive through Druid Hill Park and the central part of the city, they were received at the city hall by Acting Mayor John Hubert, who extended the city's welcome. The response on behalf of the visitors was made by Dr. Ernesto Quesada, chairman of the delegation from Argentina. After the reception the party attended a luncheon tendered by the Baltimore Board of Trade, at which function informal speeches were made by Mr. Griswold, who presided; Gov. Goldsborough of Maryland; Dr. Goodnow, president of Johns Hopkins University; and on behalf of the Latin American guests by Dr. Alberto Gutierrez, of Bolivia. Automobiles then took the visitors for

a sight-seeing tour to several departments of the university, Roland Park, the Baltimore Country Club, and through the residential section of the city. At 6 p. m. the party left on the same special train for Philadelphia, where they arrived at 8 p. m.

The following morning the party first visited the University of Pennsylvania, where the welcoming address by Dr. Smith, provost of the university, was interpreted for the benefit of the Spanish-speaking visitors by one of the Latin American students. Mr. Hano extended a welcome in behalf of the 100 or more students from Latin American countries who are in attendance at the institution, Dr. Rodrigo Octavio, of Brazil, replying for the party of visitors. The Philadelphia Commercial Museum and other places of interest were visited before the party assembled at the luncheon tendered by the Philadelphia Chamber of Commerce at the Hotel Bellevue-Stratford. After the luncheon, presided over by Mr. John Barrett, the speech of welcome was made by Hon. Thomas B. Smith, mayor of the city. Mr. Barrett spoke briefly in introducing Dr. Quesada, who replied happily for the visitors. He was followed by Dr. Ramon Salas Edwards, professor of English and mathematics at the Institute of Chile, and Gen. Carlos Cuervo M., of Colombia, formerly minister of war and foreign affairs of his country. After the luncheon the visitors were taken on a sight-seeing tour of the city, and in the evening were the guests of the mayor of the city at a performance of Mozart's "Die Zauber-Flöte," at the Metropolitan Opera House. A buffet supper and dance at the Bellevue-Stratford Hotel concluded the day's entertainment.

The next day, January 12, the party proceeded to Princeton, New Jersey, to visit the famous university, where the formal meeting in Nassau Hall was presided over by Mr. Barrett. President Hibben of the university welcomed the visitors, Dr. Eduardo Pinto, chairman of the Costa Rican delegation, replying for the excursionists. An informal luncheon was served in Proctor Hall, followed by speeches by Dr. Andres J. Montolio, of the Dominican Republic, and others, concluding with an address by Prof. Brown, of the university, in Spanish. Returning to the station after the luncheon, the party left for New York, arriving at 4 p. m.

The series of entertainments provided for the distinguished visitors by the officials, business organizations, and educational institutions of the metropolis opened immediately upon their arrival with an informal reception at the Hotel Waldorf-Astoria, where the first welcome was extended by Mr. Cabot Ward, park commissioner of New York, which was responded to by Mr. Barrett. At 7.30 p. m. an elaborate banquet, served in the main banquet hall of the great hostelry, was tendered the delegates and men of the party by the Pan American Society of the United States, the ladies and other invited guests occupying the balcony boxes.

Photo by Pach Bros.

THE EXCURSIONISTS AT YALE UNIVERSITY.

The visitors were welcomed by President Hadley of Yale in the rotunda of Memorial Hall and then informally received by the president and Mrs. Hadley and the deans and directors of the various departments of the university, being subsequently entertained at luncheon in the university dining hall.

Mr. Henry White, president of the society, presided at the banquet and made the opening address. Mr. White was followed by the mayor of the city, Hon. John Purroy Mitchell, from whose notable utterances the following are brief excerpts:

Let us strive for intellectual understanding. Let us seek the basis of appreciation of our contributions to civilization, and there will develop as the natural outgrowth of our friendship closer economic relations to cement the bonds of friendship. New York extends her hands in welcome to the people of the south, and speaks for all America when she says that she seeks to render you service, but only a service that will respond to your desires and that will strengthen and not impair good feeling and mutual regard.

. But, gentlemen, the significance of this congress seems to have extended far beyond the cementing of a closer fellowship through mere intellectual exchange. The political ideals that have been growing during recent years, that have developed rapidly through this congress, and have crystallized during the days of its sessions are of greater moment and assume the first order of importance to your countries and to the United States.

Pan Americanism has come to take its place beside the Monroe doctrine as a recognized international policy and principle. President Wilson has pointed out that the Monroe doctrine was conceived and promulgated by this Nation in the interests of its neighbors to the south, but for its own protection, and that this Nation stands behind it and will maintain it. Pan Americanism is the same principle, applied to every State and country of North and South America, but proclaimed by all for the benefit of each and of all in common. It is, therefore, in a sense, comprehensive of the Monroe doctrine, and takes its force not from the assertion of this Nation alone, but from that of all the American States together.

President Wilson has proposed to you, and has caused to be suggested to the chancelleries of the American States, the concrete form that this international political doctrine of Pan Americanism shall take. He has laid before you and the world an inspiring program of American internationalism.

As the foundation stone of that structure, he proposes a guaranty by the States of America to each other of "absolute political independence and territorial integrity," and for the rest a practical, workable arbitration agreement for the adjustment of differences among themselves, together with an agreement that will insure friendly forbearance from fostering or promoting internal dissension in a sister State. It is proposed, in short, that the American States shall stand together against foreign aggression, territorial or political, from whatever source, for the protection of each in the interest of all. Pray heaven that this political ideal may be achieved, and that at once. Is it too much to hope that before this Congress meets again the treaties that will bring this Pan American federation to accomplishment will be signed, and the friendship and cooperation of the American States cemented and established for all time?

But it is our duty to look also beyond the day of the ratification of these desirable treaties. The treaties, if made, will mean that we must stand together, but to stand together effectively we must be strong, and to be strong we must have developed and organized resources, and at least a latent and potential force. Without organized resources and a potential force sufficiently developed and prepared to permit us to call it into active being and to oppose with it effectively the highly trained and organized forces of possible aggression our treaties and our federation will mean no more in practical protection than the paper that bears their phrases.

Let us, therefore, who have committed to our keeping the ideals of democracy, the sacred principles of popular self-government, recognize the duty that rests upon the people of every nation that would maintain its independence and preserve its institu-

tions, to give of the service of its men to the cause of national preparation for defense, to the end that, being known to be prepared, we may never have occasion to defend ourselves. * * *

What is wholesome for us is also wholesome for you whose interests in this matter are the same as ours. Help, in case of need, should be available from all the States of both Americas. Let us, therefore, all of us, make ourselves effective for our common defense, that we may remain forever immune from attack and secure in the possession of the inestimable privileges of liberty and peace.

Mayor Mitchell was followed by Mr. Frank L. Polk, representing the Secretary of State of the United States, who emphasized some of the similarities in culture and the identity of interests between the Latin American countries and the United States. The next speaker was Dr. Ernesto Quesada, chairman of the Argentine delegation, who delivered what was considered by many as the most pertinent and illuminating address of the occasion. After a comprehensive analysis of the commercial, cultural, and intellectual bonds hitherto established between the Latin American Republics and the countries of Europe, and the former absence of such relations between them and the United States, Dr. Quesada, after the statement that "with the United States commercial relations were relatively secondary and intellectual relations almost nil—that is to say, at the end of the nineteenth century there was a sort of intellectual divorce between Anglo America and Latin America," continued:

Now, then, the Latin American continent has, in our own epoch, the distinction of being the most important market for the surplus industrial products of other nations, for the simple reason that its own production, in the way of cattle raising and agriculture, has not yet become of such a character as to enable it to reach the status of an industrial continent, except in certain regions. Europe is well aware of this, and, as a consequence, its principal nations have engaged in a lively competition among themselves for the conquest of that market. As they were the buyers of the natural products, it was easy to sell to the Latin American countries the manufactured articles needed therein, by learning what was desired and engaging in rivalry to supply their wants at the lowest prices and on long terms of credit.

England and Germany, principally, were conspicuous in that commercial competition, which extended to their manufacturing industries, their means of transportation, their banking systems, and their financial aid. The struggle between these two countries—and which at the same time was rife in other parts of the world, such as the East and the Far East—is perhaps the hidden cause of the present terrible world conflict. The United States, having undergone a transformation in its international ideas since the War with Spain, was confronted with this situation: It had become necessary to enter into commercial competition with those nations of Europe, and this could be possible only on an equal basis, or, rather, by offering better goods at lower prices and on longer terms. No Utopian dream of a tariff union, or differential tariffs, could be indulged in; the struggle must take place with an open door.

The sentimental propaganda of Pan Americanism had, however, introduced the erroneous conviction that because of the mere fact that all our nations are in the same hemisphere the United States ought to enjoy certain advantages, and the merchants of this country did not wish to compete with those of Europe, as the latter were doing among themselves, but rather persisted in their desire to sell to the rest of America the North American type of industrial production at prices and on terms similar to

those prevailing here. Naturally they are forced to change their ideas, for it is clear that the purchaser always prefers to buy what is most pleasing to him, at the lowest price, and on the longest credit.

Furthermore, this country found itself—and still is—without a merchant marine, therefore has to pay tribute, in transportation, to the very interests with which it seeks to compete. Instead of studying how their rivals, like Germany, brought about the cooperation of its manufacturing industry, its transportation, and its banking system, to enable them to offer the purchaser what he desired at the lowest possible price on the longest credit, not a few in this country believed that the Pan American agitation would be sufficient to make it possible for them to conquer these sought-for Latin markets.

So, then, gentlemen, we must face the truth. By following the path of sentimentalism nothing practical can be achieved; in economics legitimate interests must be respected and the fact must be taken into account that, though the vendor only seeks his profit in a transaction, the purchaser seeks his own advantage.

As you see, I am putting political questions to one side as wholly foreign to my remarks. But I must refer, however briefly, to intellectual matters and shall begin by observing, with great satisfaction, that for some years North American professors have been visiting Latin America and studying those countries, writing books of the first order and establishing relations with the directing minds of those countries. Little by little this will bring about a perceptible getting together between the two continents, and the frequency with which such conventions as the recent Pan American Scientific Congress are being held proves that such concourses will be more and more noticeable.

The speaker then stressed the importance of certain projects which he and his colleagues had presented to the congress, the most important of which related to the creation of a Pan American intellectual union, independent of governmental or official interposition, for the purpose of confederating universities, libraries, and museums, and which later might be extended to medical, legal, and engineering associations, etc., thereby disseminating instruction in all human knowledge throughout the two continents, giving paramount importance to the American ideal and binding together the men of learning in all our countries.

Upon the conclusion of Dr. Quesada's address Dr. Nicholas Murray Butler, Dr. Garcia Kohly, of Cuba, Mr. Dudley Field Malone, collector of the port of New York, and Mr. John Barrett were in turn called upon for speeches, the last named paying a glowing tribute to the men and women of Latin America who had attended the Second Pan American Scientific Congress.

The next morning the members of the party were taken for an automobile drive up Fifth Avenue and Riverside Drive, stopping for a buffet luncheon tendered by the trustees of the American Museum of Natural History, where a fine orchestra played the national airs of the various Latin-American countries, the usual speech making being omitted. From the museum the party was taken for an inspection of Columbia University and thence to the Horace Mann Memorial School, where Dr. Nicholas Murray Butler presided over the meeting and made the opening address, the other speakers being Dr. Ernesto

Photograph by Norman, Boston.

THE SCIENTIFIC CONGRESS DELEGATES AND PARTY AT WIDENER LIBRARY DURING THE VISIT TO HARVARD UNIVERSITY, CAMBRIDGE, MASS.

Quesada; Dr. Rodrigo Octavio, of Brazil; Dr. Julio Phillipi; Dr. Luis Anderson; and Hon. Seth Low. The round of entertainments for the day concluded with a reception tendered the delegates and their wives by Dr. Butler at his home.

On Friday morning the excursionists left New York on a special train of parlor cars for New Haven, Connecticut, being met on their arrival by members of the Yale students' reception committee, and after welcoming speeches by representatives of Yale University and the New Haven Chamber of Commerce they were taken on an automobile sight-seeing tour of the city. They were welcomed by President Hadley of Yale in the rotunda of Memorial Hall, and then informally received by the president and Mrs. Hadley and the deans and directors of the various departments of the university. At the luncheon tendered by the institution in the university dining hall the speakers were Dr. Hiram Bingham, presiding; President Hadley; Hon. James T. Moran, representing the New Haven Chamber of Commerce; Prof. Henry R. Lang (speaking in Spanish); Dr. Frederick B. Luquiens, representing the Sheffield Scientific School (speaking in Spanish); and on behalf of the visitors, Dr. Peña Herrera, of Ecuador; Dr. Jose Matos, of Guatemala; and Dr. Eberle Firmin, of Haiti.

After the luncheon the excursionists were divided into separate groups according to their interests, and were taken to visit various departments of the university, the Sheffield Scientific School, the Peabody Museum of Natural History, the art school, libraries, etc., all finally assembling at the library of the university to be driven to the station to resume their journey to Boston. A special reception committee of the city of Boston boarded the train at Providence and upon arriving at Boston at 8.45 p. m. escorted the party to the hotel.

The following morning, January 15, the visitors were taken through the laboratories of the Massachusetts Institute of Technology, to the new Harvard Medical School, for a drive along the Charles River, through various departments of Harvard University, and at 1 p. m. the gentlemen were entertained at a luncheon at the Harvard Union, tendered by President Lowell, while the ladies were being entertained by Mrs. Lowell at her home.

At the luncheon Hon. Robert Bacon, fellow of Harvard and former United States ambassador to France, presided and made the welcoming address, which was responded to by Dr. Fausto Davila, of Honduras. Other speakers were President Lowell, of Harvard, Dr. Victor Maurtua, of Peru, and Prof. Howard, of Harvard, who spoke in Latin.

After luncheon the guests were driven to the customhouse, where they were received by Mr. Edmond Billings, collector of the port of Boston, and Mr. Dudley F. Malone, collector of the port of New York,

after which a visit to the magnificent Boston Public Library concluded the afternoon's entertainment.

In the evening an elaborate banquet was tendered the gentlemen of the party by the Boston Chamber of Commerce at the Boston City Club, while the ladies were entertained at the Women's City Club. Mr. Louis K. Liggett, president of the chamber of commerce, presided at the banquet and made the opening address. He was followed by Mayor Curley, of Boston, in an eloquent speech in which he paid high tribute to the Latin American diplomats whom he had known personally while he was a member of the Foreign Relations Committee in the United States Congress. Dr. Eusebio Ayala, of Paraguay, responded for the delegates, being followed by Dr. Alfredo Persico, of Uruguay, and Gen. Carlos Cuervo, of Colombia. After the banquet the guests were taken to a reception given in their honor by Gov. McCall, of Massachusetts, at the statehouse, and thence returned to the Hotel Copley-Plaza to attend the ball also given in their honor.

The next day, Sunday, the 15th, the visitors were taken to the Boston Museum of Fine Arts and to the Forsyth Dental Infirmary for Children. At noon the delegates and their wives were entertained at a luncheon at the Hotel Copley-Plaza, tendered by Mayor Curley, who presided and after a felicitous speech introduced Gov. McCall, of Massachusetts, who spoke of the close commercial relations which have been established between Boston and the various Latin American countries. Dr. Rincones, of Venezuela; Gen. Sanchez, of Cuba; and Hon. William G. Phillips, of the Department of State, were also called upon for addresses, the luncheon closing in time for the visitors to return to their train, which left for New York at 4 p. m.

Arriving at the metropolis at 10 p. m., the party disbanded, the delegates being escorted to their various hotels by special aids, and thus ended the final feature of the hospitalities shown to the Latin American delegates to the Second Pan American Scientific Congress.

RECEPTION TO PRESIDENT AND MRS. WILSON.

The ambassadors, ministers, and chargés d'affaires of the republics of Latin America were hosts at a reception and ball in compliment to President Woodrow Wilson and his wife, on Wednesday evening, January 19, in the building of the Pan American Union. Floral and flag decorations, together with the electrical illuminations, added new beauty to the building. In addition to the official circle, the social leaders of the capital were present, and, mingling with the hosts, their families and intimates, and the diplomatic representatives of neutral countries, made up a scene both notable and enjoyable. On arriving at the building the President and Mrs. Wilson were met at the entrance by a committee of diplomats, including Senhor

MEMBERS OF THE CENTRAL AMERICAN COURT OF JUSTICE.

The Central American Court of Justice was established under the treaty of Washington in 1907 "for the purpose of maintaining unalterable peace and harmony" in the relations of the several countries of Central America, "without in any case being obliged to have recourse to the employment of force." The court has jurisdiction of international questions that may arise between these nations; of cases which may arise between individuals of one nation and the government of another of the countries on account of violations of treaties or conventions; of international questions arising between any of the Central American governments and any other foreign nation when submitted by mutual agreement, etc. The members of the court, whose sessions are held at Cartago, Costa Rica, as pictured above, are, standing, reading from left to right: Dr. Saturnino Medal, justice for Honduras; Dr. Manuel Castro Ramirez, justice for Salvador and president of the court; Dr. Daniel Gutierrez Navas, justice for Nicaragua; and Dr. Manuel Echeverria, secretary and treasurer of the court. Those seated, left to right, are: Dr. Nicolás Oreamuno, justice for Costa Rica and vice president of the court, and Dr. Angel M. Bocanegra, justice for Guatemala.

Domicio da Gama, the ambassador of Brazil, Sr. Don Eduardo Suárez Mujica, the ambassador of Chile, Sr. Don Carlos Manuel de Céspedes, minister of Cuba, Sr. Don Rafael Zaldivar, minister of Salvador, and Sr. Don Federico M. Quintana, chargé d'affaires of Argentina. The committee escorted their honored guests to the Hall of the Americas to the music of the Star Spangled Banner. Later Mrs. Wilson, with the wife of Secretary of State Lansing, greeted the wives of the diplomats, and the President, escorted by Secretary Lansing, paid his compliments to the hosts of the evening. A special supper was served in the two large rooms adjoining the scene of the ball, President Wilson presiding at the table in the one room and Mrs. Wilson performing the same honors in the other room.

FINANCIAL AND COMMERCIAL COMMISSION TO CENTRAL AMERICA.

The committee appointed by Hon. W. G. McAdoo, Secretary of the Treasury of the United States, to arrange a return visit of representatives of financial, commercial, and industrial interests participating in the Pan American Financial Conference held at Washington, May 24–29, 1915, to the Latin American countries therein represented, is making steady progress in its work of arranging dates, itineraries, and personnel of parties. Already the Financial and Commercial Commission to Central America has been organized and the party will sail from New Orleans February 1, returning to New York after completing the trip, about April 6. Following is the itinerary: Leaving New Orleans, February 1, arrive Habana, Cuba, February 3; Cristobal, Panama, February 8; visit Panama City, Costa Rica, Port Limon, February 13; San José, February 14; Puntarenas, February 19; Nicaragua, San Juan del Sur, February 21; Corinto, February 22; Managua, February 22; return to Corinto February 27; Honduras, Amapala, February 28; San Lorenzo and Tegucigalpa, February 28; Amapala, March 7; Salvador, Acajutla, March 10; San Salvador, March 11; Acajutla, March 20; Guatemala, San José, March 21; Guatemala City, March 22; Puerto Barrios, March 28; Santiago de Cuba, April 1; New York, April 6. The commission was appointed by the Hon. W. G. McAdoo, for the purpose of visiting the countries of Central America, upon the invitation by the Governments of these countries, and the members of the commission while in these countries will be entertained as official guests of the Governments. The membership of this commission has been selected with special reference to the particular conditions existing in Central America, with which the financial, commercial, and industrial interests of the United States may be definitely concerned. The membership of the party is as follows: Lamar C. Quintero, a prominent lawyer of New Orleans, Louisiana; Ernest Ling, manager, foreign trade department,

National City Bank, New York; John Clausen, manager, foreign department, Crocker National Bank, San Francisco, California; J. P. Ripley, of engineering firm of J. G. White & Co., New York; Thomas J. Walker, vice president First National Bank, San Fernando, California; Roger W. Babson, president, Babson's Statistical Corporation, Boston, Massachusetts. It is probable that several other eminent United States representatives will be added to this commission.

LATIN AMERICAN DEPARTMENTS AT THE UNIVERSITIES OF TEXAS AND NEW MEXICO.

The tremendous interest which has been developed throughout the United States in the countries of Latin America has had a most gratifying influence in the creation of special courses of studies on subjects pertaining to Pan America in the leading colleges and universities. While the BULLETIN has pointed out from time to time instances where this especial interest has found marked expression, it is always a satisfaction to call attention to later developments and increased interests. Within the past few months the Pan American Union has received several collegiate publications, including a pamphlet from the University of Texas on the subject of facilities for the study of Latin America at that institution, and also an issue of The University News, published in the interest of the University of New Mexico, containing a detailed statement of a new department in Latin American history. The Bulletin of the University of Texas, just referred to, presents in succinct form an outline of the rapidly increasing importance of the Latin American countries in their relations—economic, social, and educational—with the United States, together with a description of the courses offered by the university and the adaptability of these courses to the professional as well as business man. In the notice of the News from the University of New Mexico it is stated that the aim of the new department on Latin American history will be to give especial attention to the history of these countries to prepare "young men and women to enter the varied fields of activity which are being opened in Latin America on account of the closer commercial, political, social, and intellectual relations of the southern Republics and the United States."

CENTRAL AMERICA OF TO-DAY—HONDURAS[1]

REMARKABLE and delightful countries—this in brief epitomizes the impression that the traveler of to-day receives as he visits the Republics of Central America. Whether viewed from the standpoint of the tourist, the student, the scientist, the merchant interested in selling his wares or the capitalist seeking opportunities for investment, this section of the Western Hemisphere, near and accessible to the United States, offers profitable as well as highly interesting fields of activity. Everywhere the representative "Yankee Tourist" will find a cordial reception and courteous attention. Whatever occasional inconvenience he may encounter in the matter of transportation or other accomodations will be more than compensated for by the splendid spirit of hospitality which he will find. And if the tourist happens to be even a little familiar with the Spanish language and understands the customs of the countries visited, accepts conditions as he finds them with appreciative allowance for diverse, and sometimes adverse conditions of country or climate, and exercises common courtesy and tact, he will soon discover that there is very little that he can not obtain in the way of attention or favors, be they business, financial, social, or educational.

Considered as a whole the commercial and financial situation of Central America is hopeful. It may safely be said that these countries have suffered less by reason of the great economic upheavals caused by the European carnage than has any other part of the world. All along the line business is picking up and the North American business men who are working these markets intelligently are finding a profitable and favorable response to their efforts. For it must be remembered that the United States already enjoys nearly 70 per cent of the foreign commerce of these countries, and though the latter curtailed purchases during the first year of the war, they have now disposed of their large stocks and are again resuming the normal mark of trading.

It is true that transportation and communicating facilities are still far from what is to be hoped for, but the past five years have witnessed continued progress, and as these questions are everywhere agitated and plans and projects prepared, there should be still greater development in the near future. And one other matter, too, that the traveler today will notice with much satisfaction, is the growth and importance of the Pan American spirit throughout all

[1] By Harry O. Sandberg, of Pan American Union staff.

THE PIER AT PUERTO CORTES, HONDURAS.

The port of entry to Honduras from the Atlantic side. It has one of the finest harbors on the Caribbean. Protected from most storms, it has the advantage of deep water close to the pier so that steamers of good draft can lie alongside. From here runs the national railroad to San Pedro Sula and Pimienta, the present terminus of the line.

CATTLE IN HONDURAS.

The country abounds in cattle, and the development of this industry is regarded as one of the most potential resources of the country.

MAIN STREET IN SAN PEDRO SULA, HONDURAS.

One of the most important and modern cities of the Republic. Distant only a few hours by rail from Puerto Cortes, it lies in the heart of a rich banana and tropical agricultural region, and is the distributing point to the interior for a number of large commercial houses.

THE NEW LA CEIBA, ON THE NORTH COAST OF HONDURAS.

Upper: Type of concrete buildings that are replacing the old wooden structures which were wiped away by the fire of last year. Lower: One of the cars of the jitney service at La Ceiba. United States Consul Walter F. Boyle is standing beside the automobile.

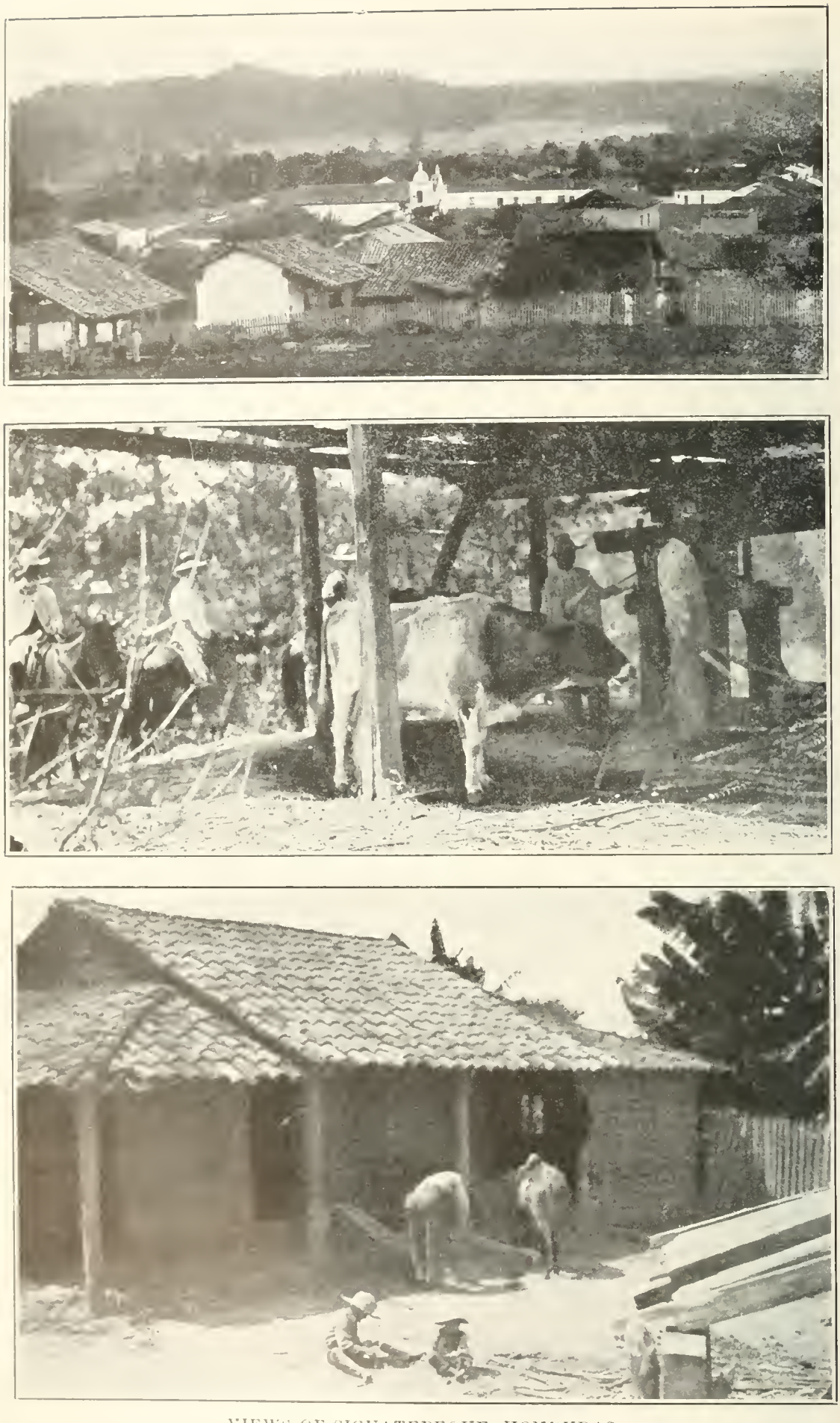
these countries, and, as a natural result, the extent to which the English language is taught and used by the peoples there. These factors will strike the tourist from the United States forcibly and favorably, for in them he will see the reciprocal of equivalent factors attracting the attention of his own country—namely, the binding closer of the traditional ties of friendship with the countries south of the Rio Grande, and the teaching of Spanish in the principal schools and universities of the United States.

A five months' tour through Central America and Panama, including visits to all the capitals and the principal interior as well as coastal towns of each of the countries, has made the writer a most enthusiastic admirer and sincere friend of our nearby neighbors, and the foregoing general impressions of that section of the continent are based on his own personal studies, observations, and experiences there.

In touring Central America you have your choice of commencing either at Guatemala, the northernmost country, or Costa Rica, the southernmost, reached via Panama, or you may even start your visits along the north coast of Honduras to which ports there are frequent and regular steamship services from New York or New Orleans. The writer himself sailed from New Orleans, and after a pleasant four days over the beautiful Caribbean arrived at Puerto Barrios, the Atlantic port of Guatemala, and then proceeded along the north coast of Honduras, starting at Puerto Cortes, returning later to Barrios, and continuing through Guatemala and Salvador. From this country he was able to make Amapala, the Pacific coast port of Honduras and thus complete his visit to that country by a delightful automobile ride to Tegucigalpa, the capital.

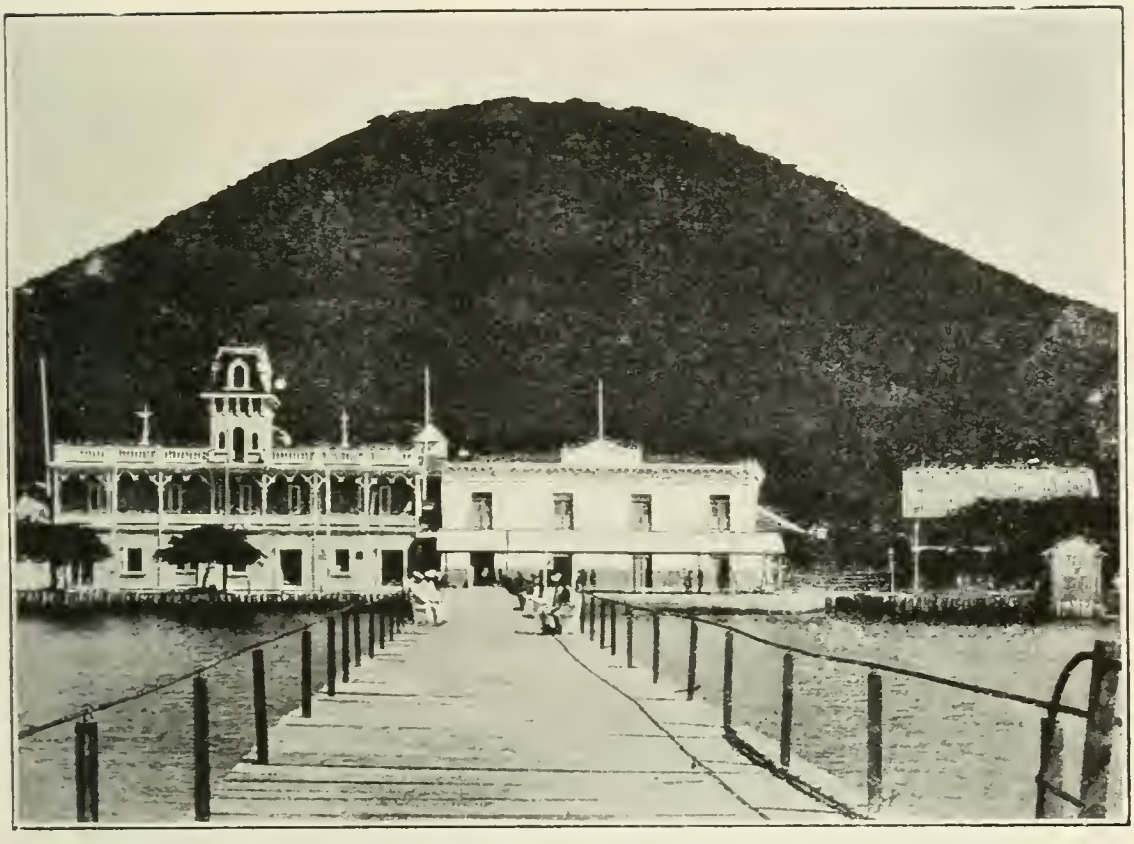
Whatever may have been said or written concerning Honduras in the past, you will happily find that today a new order of things exists; a refreshing spirit of optimism, hope, and ambition. Its fertile territory, rich mines, abundant cattle, immense forests, healthy growing banana and sugar plantations, together with its numerous other natural resources give promise of future wealth and prosperity, and a continuance of the peace and order with which the country has been blessed for the past years, and the pushing forward of its constructive plans and policies will mean that capital and development will soon combine to transform its resources into tangible wealth.

Geographically, Honduras is especially favored. Occupying the center of Central America it enjoys a coast line along the Caribbean of nearly 400 miles with numerous prosperous ports, and on the Pacific side it has a coast line of about 70 miles along the Gulf of Fonseca with a port of entry at Amapala. It has a variety of climate, soil, and products. The large and fertile plateaus and valleys produce nearly all the tropical crops and offer excellent pasturage for numerous



VIEWS OF SIGUATEPEQUE, HONDURAS.

Upper: The valley of Siguatepeque. Center: Milling sugar in the interior of Honduras. Lower: One the work buildings of the agricultural school at Siguatepeque.



WHARF, CUSTOMHOUSE, AND METHOD OF DISCHARGING FREIGHT AT AMAPALA, THE PACIFIC COAST PORT OF HONDURAS.

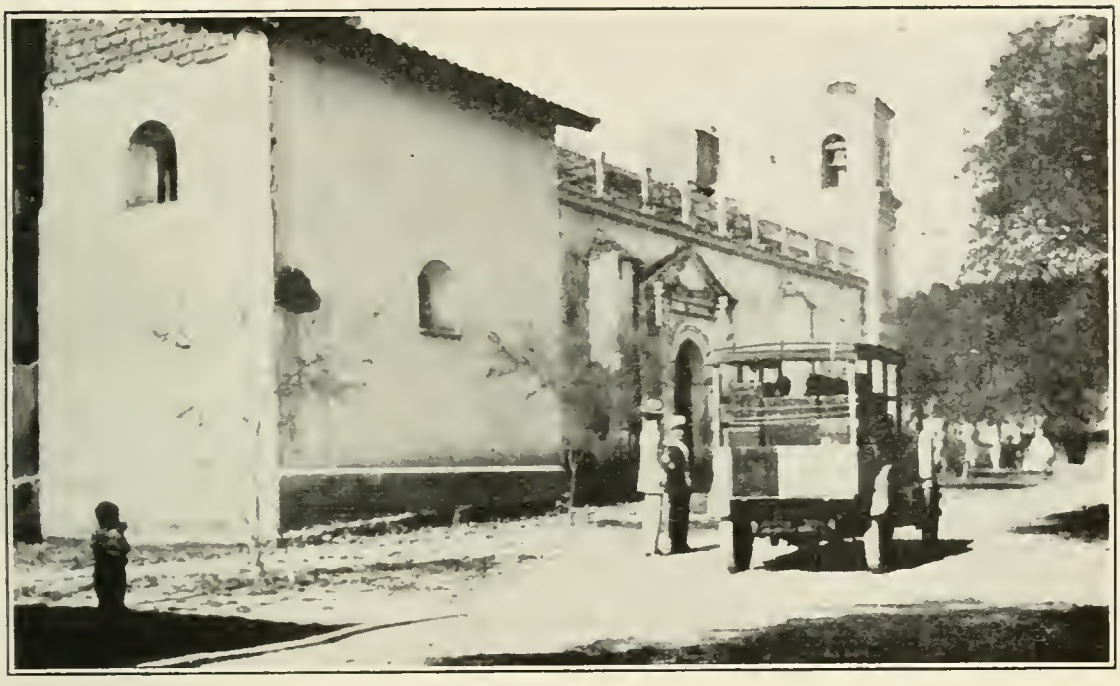
Tegucigalpa, the capital, is best reached through the Pacific side via this port.

herds of cattle. In the hilly country at altitudes of from 1,500 to 3,000 feet, coffee is grown. Cattle, estimated anywhere from 750,000 to 1,000,000 head, graze in the splendid portreros. At present there is no market for them except for local consumption or exporting of hides, so that it is reasonable to assume that with the possible opening of the Gulf ports of the United States to Honduras beef, this industry could be profitably developed. The big mine of Honduras, the San Juancito, continues to be the one extensive plant of its kind, but placer mining in the Department of Olancho continues to produce limited returns, and in practically all of the mountain departments there are gold or silver mines capable of development.

But it is the banana industry that is looming up as the big economic factor of Honduras. Today it is the most important industry both as regards present development and future possibilities. The wealth of the north coast is almost entirely dependent upon this product and the values derived from that source largely determine the financial and economic condition of the community and practically of the country. The opportunities for the further development of this industry are almost unlimited, as the lowlands along the entire Atlantic coast and for a considerable distance inland along the numerous rivers, are almost ideal.

Although these natural resources are but in the infancy of development, yet you can not help but be impressed with the marked evidences of progress that you meet as you pass from town to town. From Puerto Cortes, a typical tropical port, with a deep-water bay protected against all winds, splendid wharves where ships of any draft may be moored, and lighthouses flashing out in the night to guide the mariners on the sea, you take a run over to San Pedro Sula on the National Railroad. This trip is a distance of 38 miles, and the railroad continues farther along for about 20 miles to Pimienta, the terminus. Here, over the Ulua River, you see a splendid steel bridge recently inaugurated and its cost, $88,000, paid for out of the earnings of this small piece of railroad. The Government, realizing the advantages of a highway connection between the capital and the Atlantic seaboard, is pushing forward an automobile road from Tegucigalpa through Comayagua, the ancient capital, to this point.

San Pedro Sula is prettily located in the fertile and populous Sula Valley and is the capital of the Department of Cortes. It lies in the heart of an important agricultural section and is the center of many large commercial houses, since it is the natural distributing point to contiguous departments. The city is modern and attractive, clean and inviting. The governor of the department, a young, progressive, and vigorous man, temporarily laid aside the rod and transit of a successful engineering career to serve in this capacity. He is a graduate of a college in the United States and has decided ideas on



ON THE ROAD TO TEGUCIGALPA, HONDURAS.

From the Pacific side to the capital connection is maintained through an automobile service over a splendid highway, kept in good condition by the Government. The trip is a most delightful one, and the automobiles used are large, comfortable, and of North American make. The upper picture shows one of the automobiles making its first stop at Pespire. The lower view illustrates a section of the 90-mile highway to the capital.

Photos by F. T. Coxe.

SCENES EN ROUTE FROM COMAYAGUELA TO TEGUCIGALPA.

Separated by the River Choluteca is the little town of Comayaguela, so near to the capital as to be frequently called its twin city. The top view shows the new bridge of stone and concrete leading to the capital. The center picture shows the market place at Comayaguela. The lower picture shows another view of the bridge.

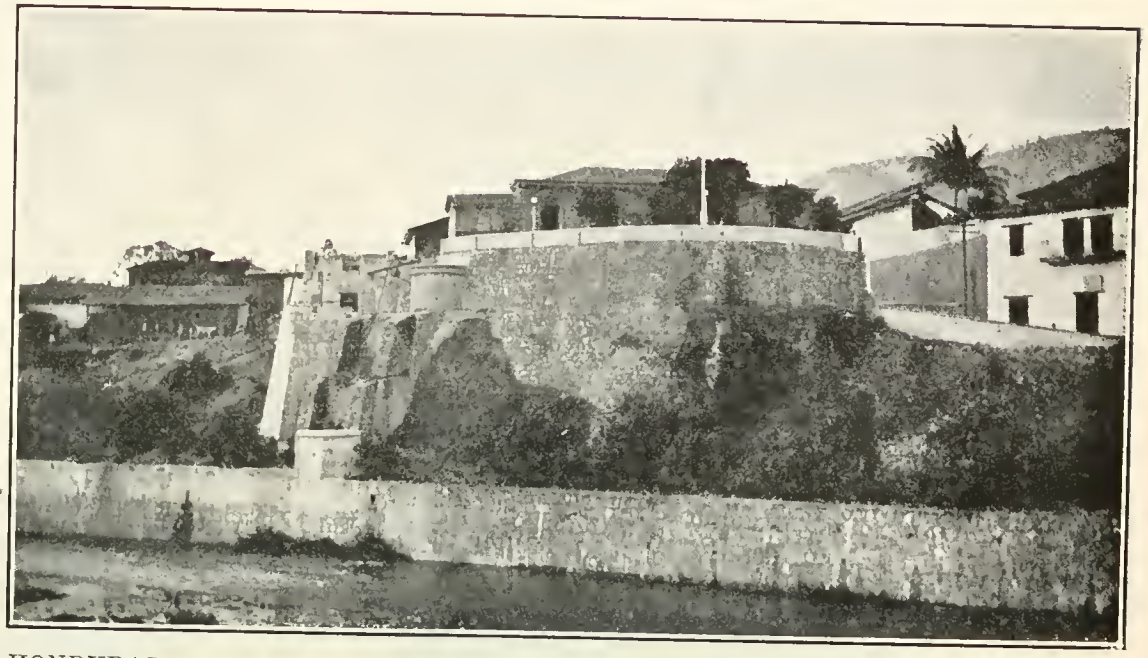
efficient public administration. Already there are underway plans for a telephone system, a hospital, large avenues and boulevards, parks, and schools, all reflecting the spirit of Honduras to-day. In San Pedro you find the calm and quiet life of the interior tropical country and are delightfully charmed with it all.

From here you return to Puerto Cortes and an overnight sail brings you to La Ceiba. You receive a rather sudden awakening. The peaceful calm of San Pedro, with its alluring atmosphere, seems to be missing. True, the setting is tropical—the climate, the people, the rugged mountains—but the life is changed. Hustle and bustle, hurry and scurry—these seem to be the ways. Foreign capital has entered here on a large scale and Honduras has given a helping hand for their mutual benefit. You are struck by the sharp contrast, you wonder in amazement, you ask the reason for it, and then you are told.

The north coast of Honduras is the banana, coconut, and sugar land. Nearly 90 per cent of the exports from this district consist of bananas, and this product comprises nearly 50 per cent of the total exports of the country. Big areas planted to sugar by way of experiment are exceeding expectations, and with improved transportation facilities this product bids fair to hold an important place in the agricultural development of the country.

Twenty-five years ago La Ceiba was a struggling settlement of but 300 inhabitants. To-day it is an up-to-date modern little city of the busy and better variety with a population of 8,000 and plenty of business activity. The shrill whistle of frequent trains, the rising smoke from the engine shops, the rushing about of employees, officials hurrying here and there to make ready the clearance papers so that the steamer loaded with bananas or sugar may sail before nightfall—how strange this all seems, and yet how natural the progress! But the meaning of all these new buildings? A disastrous fire in March, 1914, destroyed 19 blocks with most of the city's mercantile establishments, office buildings, and private residences, and La Ceiba is rising from its ashes a better, a bigger, and a busier city. Buildings of reinforced concrete, concrete blocks, or metal lath concreted over are replacing the former wooden structures. A new customhouse, government offices, shipping offices, stores, hotels, and even cafés are included in the new construction program.

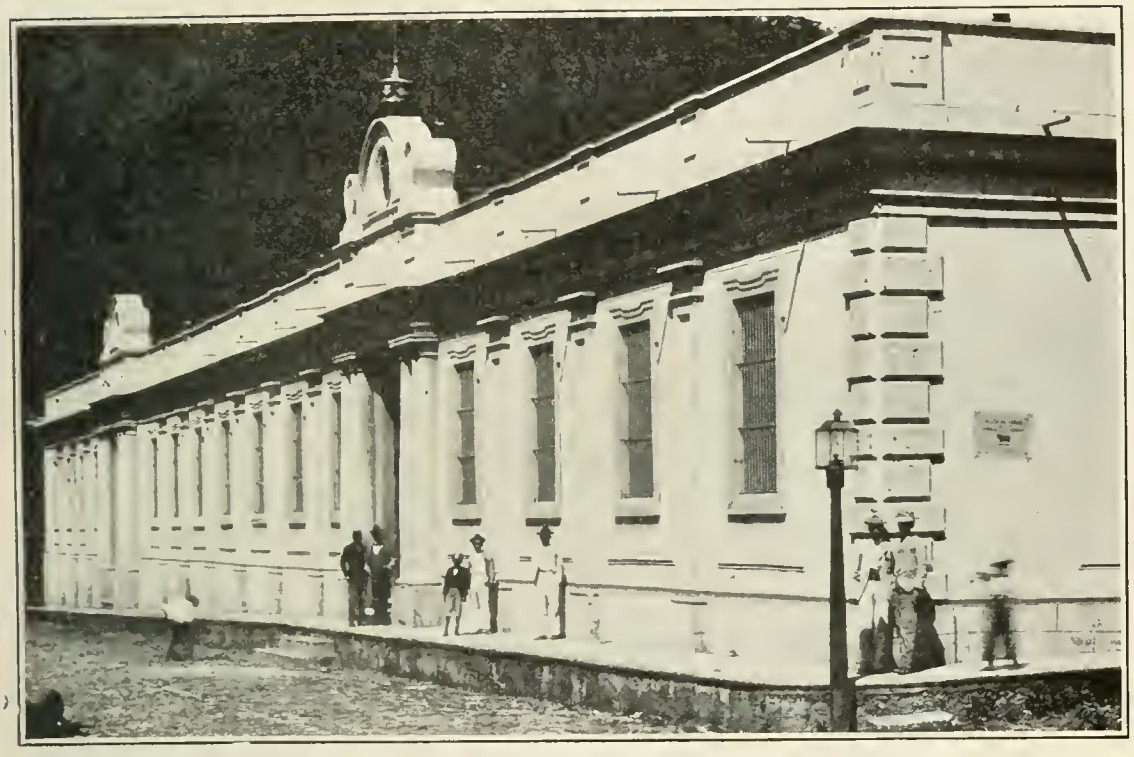
The frequent arrival and departure of vessels from a splendid wharf make it necessary that La Ceiba keep in touch with shipping, and a wireless apparatus serves that purpose. You see one of the lofty towers rising from the ground while its companion is built out from the hollow of a tall ceiba tree at its side, a strange and novel sight. Though the streets have not all been repaved since the fire, yet you must step lively all the time, for running back and forth and

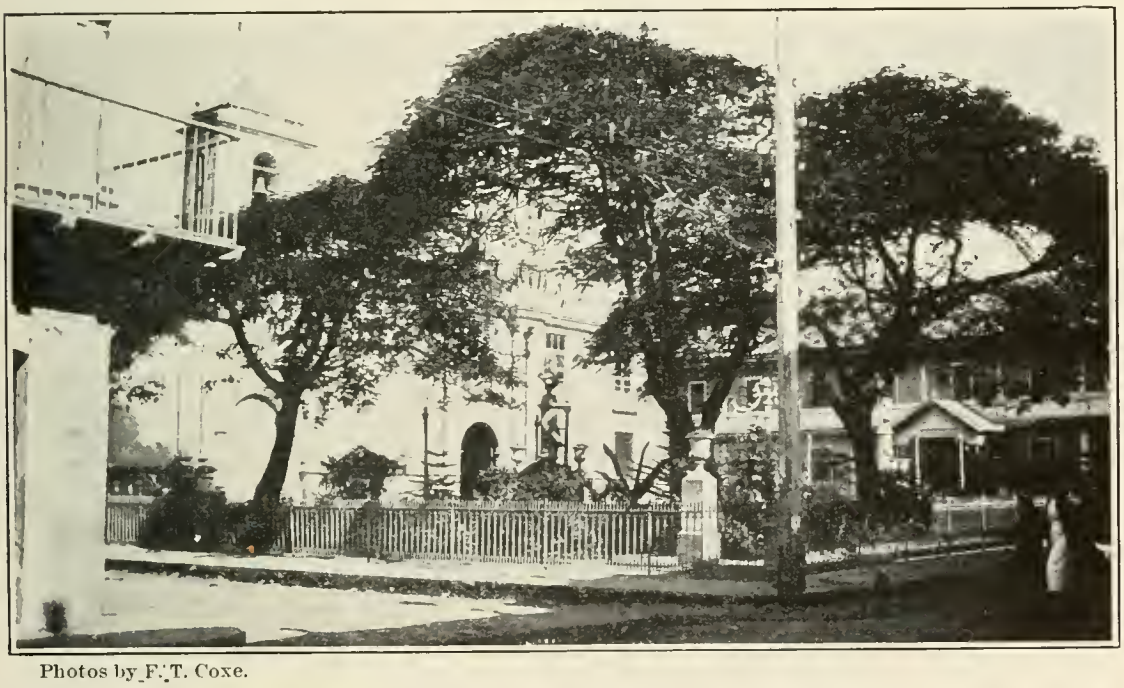


Photos by F. T. Coxe, secretary of American legation.

TEGUCIGALPA, HONDURAS.

Entering the capital city from Comayaguela, just after passing over the bridge, two buildings stand out prominently, the presidential palace and the buildings of the electric-light plant. The lower right picture is the presidential mansion, a large building built on a blufflike formation, constructed of stone and handsomely furnished. The lower left view is the recently completed building of the electric-light plant. It is equipped with two large gas engines, and provides the electric needs of the capital and Comayaguela.





Photos by F. T. Coxe.

PUBLIC BUILDINGS AT TEGUCIGALPA, HONDURAS.

The upper picture is that of the public hospital, a large spacious building in the center of the city. The lower view is near Park La Merced, with the building of the university to the right.

around the short blocks, with an all too familiar chug-chug, is a jitney service of some eight cars of a North American make whose reputation has been enhanced by vaudeville stars as much as by its own merits. It is but fair to state that much of the development of this town and port is due to the Vaccaro Bros., who are the chief factors in the fruit-growing and shipping activities.

From La Ceiba you take a trip over to Tela, another town and port where rapid development is taking place. Here you again meet the characteristic hustle and bustle with which you first became acquainted at La Ceiba. But there is something interestingly peculiar about Tela. A small wooden bridge over a little stream divides the town into what is known as the Old Tela and the New Tela. The division is, of course, merely one for the convenience of those who are busily employed in the fruit and shipping departments. In this region the United Fruit Co. is developing, with the aid and cooperation of the Honduran Government, the youngest of its divisions. Located in the fertile lowland between Puerto Cortes and La Ceiba, along the banks of the Colorado River, the Micos Lagoon and the alluvial flats along the Ulua River, Tela boasts of an excellent harbor and a splendid pier and wharf. Buildings, shops, commissary stores, dwellings, and even a baseball diamond and grand stand combine to impress the stranger that Honduras is alive to present-day needs for the healthy development of her resources. Already extensive tracts of land are yielding abundant fruit, and as the banana lands in other countries cease to be productive, Honduras looms up as the next great banana country.

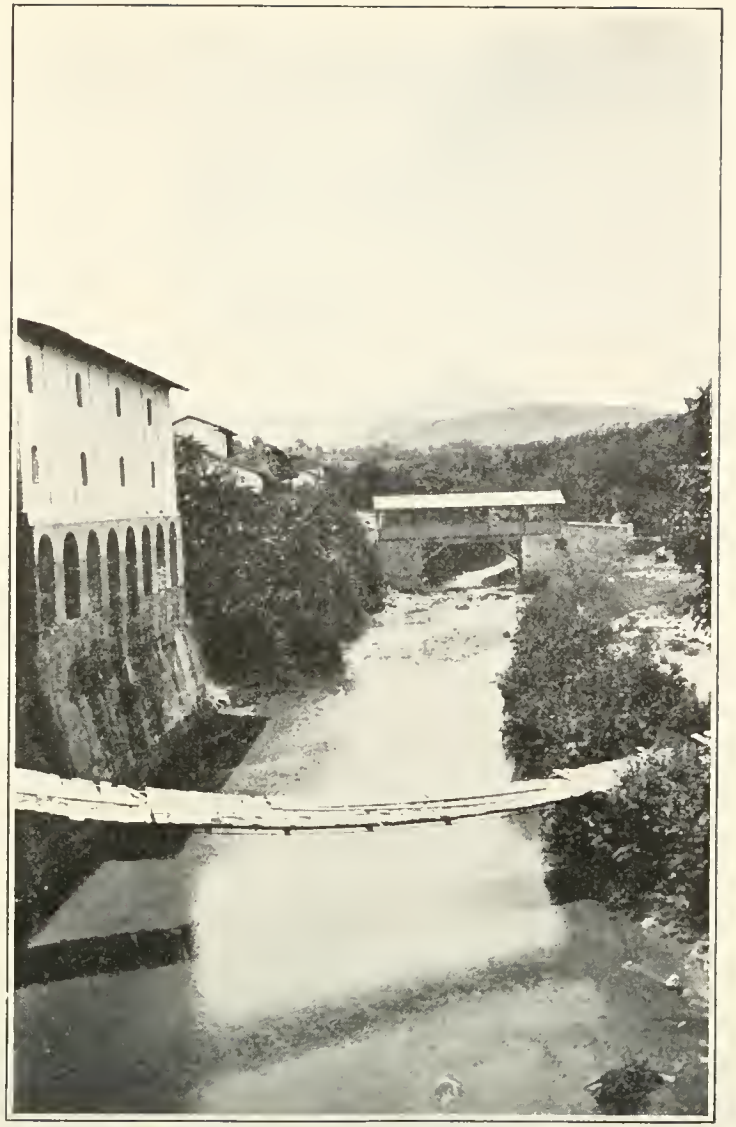
Turning from the Atlantic coast to the Pacific side of the country you come to Amapala, the only port of entry on that side. Located in the Gulf of Fonseca, on the island of Tigre, there is a deep and safe harbor, but the piers are at present too small for ships to discharge alongside, so passengers and merchandise are transferred by lighters. Few ports are as picturesquely situated as is Amapala. Nestling at the foot of a mountain, the stretch of white buildings along the beach presents the appearance of a piece of fringe at the base of the island which rises in a tall symmetrical cone. You enter the town and at the one end, near the barracks, is a pretty park with a statue of Morazan. A few blocks away in another direction, near the cathedral, is another park with a bust of Manuel Bonilla. Thus you are introduced to two of Honduras's historic characters of early and of more recent date. On steamer days the port presents a lively scene. Hides and logwood are the principal exports from this port and the lightermen, their trousers rolled up to their knees, carry their load some 25 to 50 feet into the waters, deposit it into lighters or barges, and these in turn are rowed or towed out to the vessel, about a mile away. And unloading is done in the same manner.

STATUE TO THE LATE PRESIDENT MANUEL BONILLA, RECENTLY UNVEILED AT TEGUCIGALPA, HONDURAS.

One of the important features of the Columbus Day celebrations at the capital was the unveiling of this bronze monument to the memory of Gen. Manuel Bonilla and in recognition of his service to the country. The bronze is mounted on a marble and granite pedestal and occupies the center of the Park.

SCENE AT THE UNVEILING OF THE BONILLA MONUMENT.

The elevated situation of the park where stands this statue gives it an impressively commanding position. The statue looks out over the entire city, as if contemplating and approving the spirit and progress of all it surveys. The inscription on the pedestal reads: "To General Manuel Bonilla, defender of the dignity and sovereignty of Honduras. His friends."



Photos by F. T. Coxe.

SCENES AROUND TEGUCIGALPA, HONDURAS.

Left: Road leading to the capital. The cathedral towers rise in the foreground. Right: View of Rio Chiquito, which flows through part of Tegucigalpa.

The lighters are brought to within 25 feet of the shore and boxes and trunks, barrels or bales, are carried on the backs of these men onto the shore. You do not spend much time at Amapala, for you want to get on to Tegucigalpa, the capital.

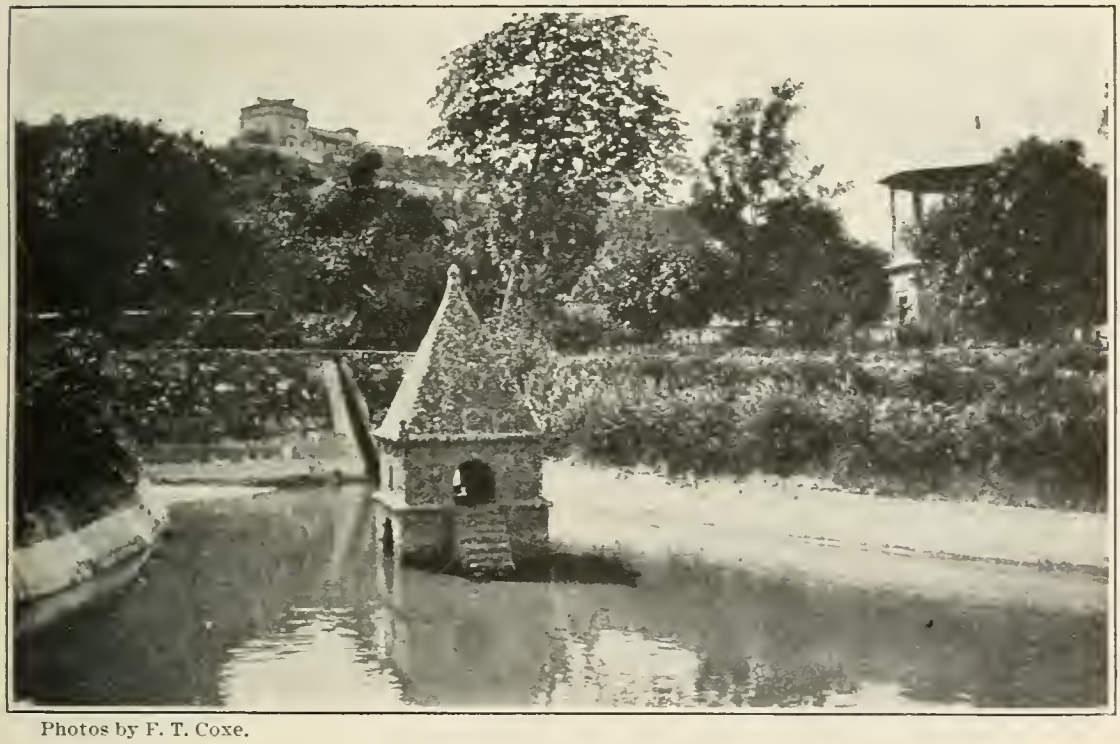
No longer do you have to worry or fret over this part of the journey. No longer is it necessary to plan on a two to three day horseback or mule trip. You now make the trip in a big, powerful automobile. It is a comfortable trip and a most enjoyable one. First you take a gasoline launch over the 20 miles of pretty lake to San Lorenzo, which marks the end of the highway to the capital. Between there and Tegucigalpa there is a tri-weekly automobile service, and the Government of Honduras is spending nearly $40,000 annually to keep this remarkable road in the best of condition. For nearly seven hours you ride through the mountains, a distance of about 90 miles, over one of the best macadamized roads in America. The route for the most part is over mountainous country, ascending to a height of nearly 5,000 feet and then descending to about 3,000, the altitude of the capital. En route you pass a number of picturesque little towns, and frequently as you ascend a lofty ridge you can look back and for miles and miles see the circular turnings and zigzag formations of this broad white highway many hundred feet below. From one point on this road, near the Cerro de Hule (Hill of Rubber), at an elevation of nearly 5,000 feet, under the unclouded skies of a sunny day, you see the towering peaks of Nicaragua's volcanoes, Momotombo and Chinandega; and nearer still is Salvador, indicated by the majestic peak of the San Miguel volcano; and sparkling far in the distance you may even see the shimmering waters of the Pacific.

At last you come to Tegucigalpa, the capital. The poets have translated this to mean the "City of Silver Hills." As you gaze at the city lying in a hollow at the foot of surrounding hills and mountains you appreciate how appropriate is its name. Entering the city, you pass over the new bridge of hewn stone and cement, and on the eastern and upper end, as if on a bluff or embankment, stands the Government Palace. In this building are housed the presidential offices as well as those of the cabinet officials. Adjoining the palace is the university building, formerly a church. A block or so away you come upon the Plaza Morazan, with its pretty park, an imposing statue of Morazan occupying a prominent position, the usual band stand, and apace with modernity, there is even a booth in the park with a moving-picture machine. The city occasionally holds moving-picture performances for its people, and the pictures are projected upon a screen hung in the plaza. The cathedral occupies one side of the square and numerous shops are around the others.

Photos by F. T. Coxe.

SCENES IN AND AROUND TEGUCIGALPA, HONDURAS.

Upper: Guttenberg Avenue, shaded by rows of broad trees, is one of the most attractive streets of the capital. Center: The famous "guanacaste" tree. The wooden wheels of ox carts are made from its trunk. The fruit of the tree is used as a remedy against snake bites. Attention is called to the size of the trunk. Lower; Section of Choluteca River, which divides the capital from its twin city, Comayaguela.



Photos by F. T. Coxe.

PARK SCENES NEAR THE CAPITAL OF HONDURAS.

Upper: A swimming pool on the country estate of one of Tegucigalpa's prominent families. Just outside the capital are numerous beautiful estates of this character. Lower: Concordia Park. Tegucigalpa boasts of six charming little parks and its neighbor city, across the bridge, of two.

If you happen to be fortunate enough to arrive in the capital on some festal occasion or holiday, you would then note even more markedly the splendid spirit of the country and its hospitality. Columbus Day festivities were in progress when the writer reached the capital. A statue to Gen. Manuel Bonilla was to be unveiled on October 12, in commemoration of his public services and as a tribute to his administration. Moreover, Honduras was enjoying a continued period of peace. President Bertrand and Acting President Membreño were both held in high esteem and loved by the people. Honduras desired to take advantage of this opportunity to publicly indicate its sympathy and friendship toward them, and also to proclaim its satisfaction at their candidacy for reelection to the offices of president and vice president, respectively. Accordingly a large banquet was held on the night of the 11th in honor of these many things. It was a splendid gathering and a memorable sight as the 300 guests sat down in the halls of the chamber of commerce. Presidents Bertrand and Membreño and the members of the cabinet sat at the head of the table. Behind them on the wall hung a large portrait of Gen. Bonilla draped in the colors and arms of Honduras. On the walls opposite hung two other portraits, the one of President Bertrand, the other of Vice President and Acting President Membreño. Palms and ferns in great profusion were everywhere in the hall. The tables were a veritable bower of bright colored and fragrant flowers so abundant in tropic lands. In a far corner of the hall a stringed orchestra played operatic tunes with an occasional Spanish melody. The whole spirit of the occasion was genial, cordial, and warm. Appropriate addresses were delivered, breathing the spirit of Columbus Day, eulogizing the late Manuel Bonilla, and paying homage to the two men who have since then been reelected to the highest offices in the land.

The unveiling of the monument in Bonilla Park on the following day was another eventful occasion. Prior to the ceremonies in the park, the President, his cabinet, the diplomatic and consular representatives, high Government officials, and a long line of representative citizens, soldiers, uniformed students—both boys and girls—from the various schools, even down to the little kindergarten children, dressed in their attractive costumes, formed a procession and marched to the park, located on a high hill and overlooking the entire city. Amid the din and roar of cannon, the firing of salutes by the soldiers, the martial strains of the military band, the draperies were flung to the breezes and the stalwart bronze figure of Bonilla, mounted on a marble pedestal, stood commandingly gazing over the capital and its inhabitants who were that day honoring his memory.

But modern Honduras is doing other things, as well. The schools at the capital, in the interior towns, and on the coast, are developing

Photo by F. T. Coxe, secretary of American legation.

SITUATED ON A COMMANDING HILL, OVERLOOKING THE ENTIRE CITY AND MANY MILES BEYOND IN ALL DIRECTIONS, IS THE AMERICAN LEGATION. THE BUILDING DIRECTLY IN FRONT IS THE CHANCELLERY; THE SECTION TOWARD THE LEFT IS THE LEGATION HOME.

the younger generation into useful and industrious men and women. Schools of arts and crafts, practical and domestic science, machine and work shops, are teaching and training the young in the new order of things. An attractive theater inaugurated but a few months ago stands as a monument to the cultural and literary tastes of the community. Three banking institutions operate in the capital, and one, as a result of the recent Pan American Financial Conference, enlarged its capital, introduced a special commercial department, and is financing and offering long credits to local merchants in the sale of United States made commodities. The past year has seen a reduction in the interior debt of the country; no moratorium was declared nor even considered by Honduras; government employees were promptly paid, and work was continued upon many of its public works. Among the important highway developments receiving attention now are the road, mentioned before, from Pimienta to the capital, forming an Atlantic coast outlet at Puerto Cortes, and another automobile highway in a northeasterly direction to Juticalpa, the capital of the department of Olancho, one of the most fertile and productive sections of the country in addition to its inexhaustible riches in minerals.

These, then, are the qualities and characteristics which impress the visitor of to-day in Honduras—activity, industry, hope, and peace. The spirit of the country embodies these four elements, and under the able and progressive administration of Drs. Bertrand and Membreño, assisted by the splendid type of men in the cabinet, the future of the country appears indeed bright and hopeful.

A UNIQUE SALT INDUSTRY IN CHILE[1]

ONE of the most unique methods of mining common salt is that employed at Lagunas, in the Province of Tarapaca, Chile. Salt deposits in form available for commercial extraction occur at many places and in large quantities all over the world. It is, indeed, fortunate that an article which is such a daily necessity should occur so generally in a way that the production of it is simple and inexpensive, yet probably nowhere is salt produced in quite so simple a way as at Lagunas. Here nature does everything except sack the salt and place it in the cars for shipment.

[1] By Joseph T. Singewald, jr., and Benjamin Le Roy Miller.

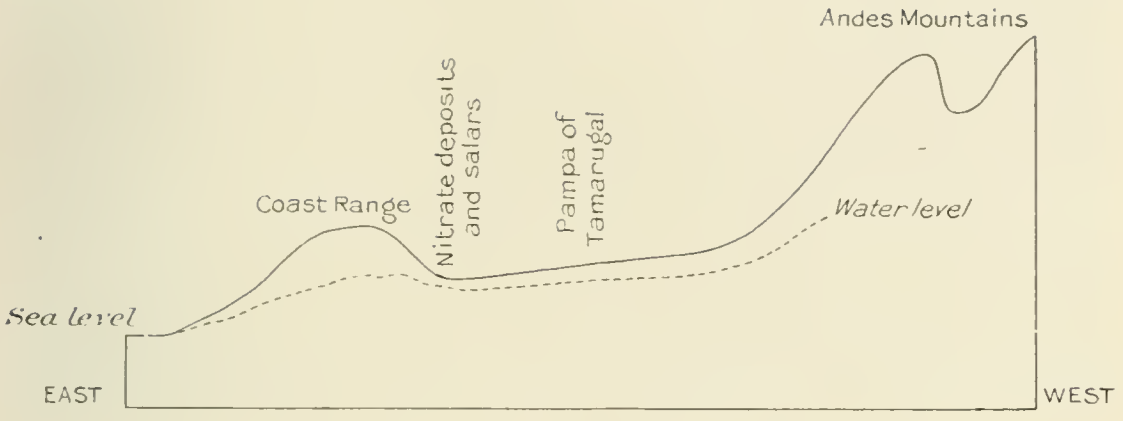


FIG. 1.—CROSS SECTION OF TAMARUGAL PAMPA, CHILE.

The Lagunas salt works are located in one of the "salars" that are so abundant in the Tamarugal pampa, as the great flat desert in which the nitrate deposits occur is called. In the above figure, which shows and east-west cross section, the vertical scale has been exaggerated in order to more clearly bring out certain relations discussed in the article.

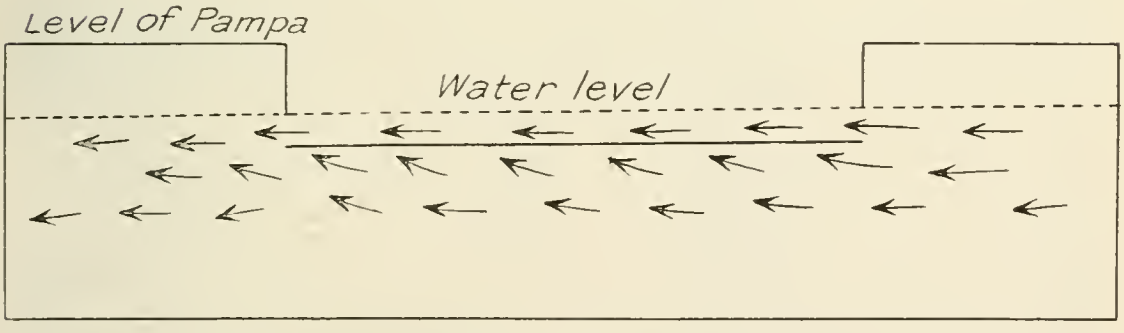


FIG. 2.—ILLUSTRATING MOVEMENT OF GROUND WATER NEAR SALT DITCH.

The diagram shows in a general way the movement of the ground water in the immediate vicinity of a salt ditch, there being a general lateral movement and an upward component to replace the water lost by evaporation, as fully explained in the text.

Lagunas lies at the south end of the Iquique nitrate field, which is the most important of the nitrate districts that have made Chile world famous and for 30 years have furnished the bulk of the revenues of the Chilean Government. It is connected with the sea by means of the south branch of the Nitrate Railways through the port of Iquique, that lies 89 miles to the north. The same causes and conditions that have made possible the accumulation of and preservation of the wonderful nitrate deposits have enabled the establishment of this unusual salt industry.

The Lagunas salt works are located in one of the "salars" that are so abundant in the Tamarugal pampa, as the great flat desert in which the nitrate deposits occur is called. The Tamarugal pampa is bounded on the east by the western range of the Andes and on the west by the Coast Range of mountains. These topographic features are shown in the east-west cross section in figure 1, in which the vertical scale has been exaggerated in order to more clearly bring out certain relations that will be discussed farther on. The pampa is a country characterized by an almost complete absence of rainfall. Winds that blow across the continent of South America from the east are laden with moisture. As they reach the eastern side of the Andes they are deflected upward. This movement causes a rapid cooling of the air, due to the lower temperatures prevailing at higher altitudes and to the decrease in atmospheric pressure. Consequently, these moisture-laden air currents precipitate their moisture most copiously on the eastern Andean slopes and reach the western side of the mountains practically devoid of moisture. Instead of causing rainfall in the pampa country, these winds evaporate with extreme avidity whatever moisture they may come in contact with.

Almost equally dry are the winds that blow across the pampa from the Pacific Ocean. A short distance off the west coast of South America is a cold northerly current, known as the Humboldt current, that acts as unfavorably upon the climate of that coast as does the Gulf Stream favorably upon the climate of the Atlantic coast of the United States. The prevailing winds along this west coast are the westerly winds coming in from the sea. As they cross the zone of cold water of the Humboldt current, they are chilled and lose most of their water content. Then on reaching the coast and being warmed up again they are deficient in moisture and also have a great evaporating capacity.

Hence, whether it is the prevailing westerly winds or the occasional winds that sweep across the pampa from the Andes on the east that are blowing, the air over the pampa is nearly always extremely dry and evaporates water rather than precipitates it. These atmospheric conditions have made the pampa a desert in the strictest sense of the word. We speak of deserts in the Great Basin region of the

SURFACE OF A TYPICAL "SALAR."

The "salars" are easily recognizable by the character of the surface. The force of crystallization of the salt under the surface has produced little hummocks, and this tension has caused the surface to crack.

Photo by I. F. Scheeler.

ON A VERITABLE SALT "LAKE."

The same causes and conditions that have made possible the accumulation and preservation of the wonderful nitrate deposits of Chile have operated to produce these large areas of sodium chloride, or common salt.

western United States, but there one does see an occasional clump of sagebrush, or patch of greasewood, or at least a few scattered cacti, whereas one can search in vain for the smallest evidence of living vegetation over square miles of the pampa.

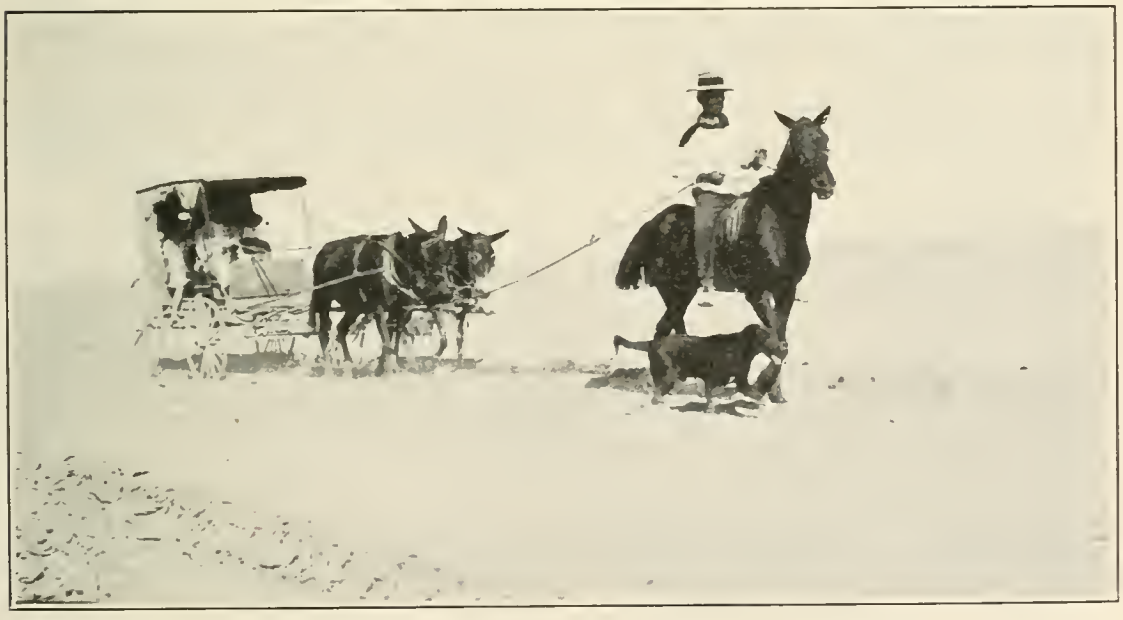
Now let us consider how these extreme conditions of parched winds cloudless sky, and hot tropical sun have made possible the simple method of extracting salt in use here. As indicated in figure 1, the pampa is a flat plain with a gentle westward slope away from the Andes toward the coast hills. The site of the present pampa was once a large broad valley that has been filled up with gravel, sand, and silt washed down in large measure from the summits and slopes of the Andes Mountains that tower above it on the east side. In past ages rainfall was more abundant in these regions than now, and the water collected in numerous depressions in the surface of the pampa in the form of inland lakes. On account of the westward slope of the pampa the lakes formed mostly along its western edge. The waters draining into the lakes carried with them the soluble salts leached out of and formed by the disintegration of the rocks of the surrounding country, and since they had no outlet they became more and more saline, just as in the case of our own Great Salt Lake and the Dead Sea. As aridity increased the lakes finally dried up, giving rise to the highly saline depressions in the pampa that are known in Spanish as "salars." The "salars" are characterized by an abundance of sodium chloride, or common salt, in the underlying soil and the absence of nitrate. The nitrate occurs in the surrounding higher lying ground. One must not be misled into thinking of these "salars" as occupying deep depressions, for in general they are so gentle as to be scarcely perceptible to the eye. They are at once recognizable, however, by the character of the surface. The force of crystallization of the salt under the surface has produced little hummocks and this tension has caused the surface to crack, so that the "salars" are characterized by a broken hummocky surface, whereas that of the pampa round about is smooth and even. While there are enormous quantities of salt underlying these "salars," it is usually so mingled with the detrital rock material of the pampa as to be unusable in its natural state.

The only waters circulating at the present time across the pampa are the underground waters which have a general direction of flow from the higher slopes of the Andes, their feeding ground, westward under the pampa to the sea. The upper surface of ground-water level has approximately the shape of the surface of the earth above it, but with less accentuated relief. In other words, it is nearer the surface at the points of lowest elevation and farther from the surface under the highest points. These relations are illustrated in figure 1

Photo by I. F. Scheeler.

WALKING OVER A FIELD OF GENUINE SALT.

A remarkable deposit of salt, similar to this, is located at Lahunas, in the Province of Tarapaca, Chile. "Here nature does everything except sack the salt and place it in the cars for shipment."



ON THE NITRATE PAMPA OF TAMARUGAL, CHILE.

One section of the world where it has never rained and probably never will, the result being an absolutely arid desert. A clear explanation of this phenomenon may be found in the text of Messrs. Singewald and Miller's article, "A Unique Salt Industry in Chile."

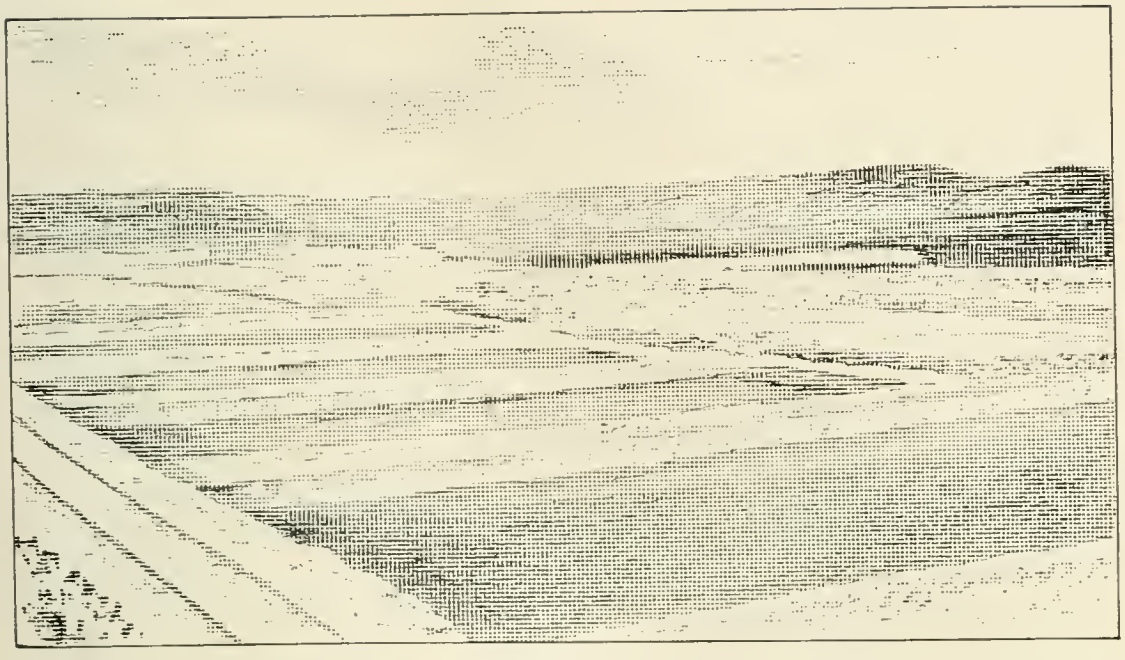
Consequently, the underground waters are nearest the surface underneath the "salars" on the west side of the pampa.

One of the striking features of the pampa is the shallow depth at which ground water is encountered. In even less arid regions than this ground water usually lies at a depth of hundreds, and in some cases thousands of feet, whereas, in the nitrate fields, the depth of ground water is measured in tens of feet. Still more remarkable is the fact that in the "salar" in question, where the salt is produced, ground water lies at a depth of only 3 to 3½ feet.

The conditions described above have very ingeniously been made use of to establish a salt industry in this "salar." Ditches are cut in the surface of the "salar" to a depth of 8 inches below the level of ground water. The ditches, exposed to the hot, dry sunshine and parched winds, act as very efficient evaporating pans, and the saline water underlying the "salar" that is exposed in the ditches is evaporated to the point of saturation when salt begins to crystallize out in the bottom of the ditches. Since the level of ground water is maintained in the ditches by the constant seeping in of the ground water, the salt continues to accumulate until it reaches the height of ground water, or a thickness of 8 inches, when the ditch has dried up. The salt is then shoveled out by hand, and as it is removed the water again comes in. The men who do this stand in the concentrated brine solution in their bare feet, with the result that their feet become dreadfully sore and they frequently are compelled to lay off until they heal again. After a ditch has its salt removed, the same process is gone through again, and can be repeated indefinitely. The rate at which the salt forms is 1 inch in 15 days, or at the rate of three crops of salt a year.

The salt is shoveled out on the ground between the ditches and there allowed to drain and dry, and is then packed in sacks holding 2 quintals each, or about 200 pounds. Most of it is of a beautifully snowy white color and quite pure enough for table use. Occasionally, however, the violent wind storms which sweep across the pampa blow enough of the yellow pampa dust into the ditches to give the salt a dirty color. Such salt is kept separate from the rest and sold for cheaper uses. A branch of the Nitrate Railways to the South Lagunas Nitrate Oficina runs between the salt ditches and affords very convenient loading and shipping facilities.

This salt industry was established on a very small scale about 10 years ago and has proved to be such an inexpensive method of producing salt that it has grown rapidly, until now there are 150 of these evaporating ditches. Each ditch covers an area ranging from about 40 by 40 feet to 40 by 100 feet. The output is now about 16,000 quintals a month, which is roughly equivalent to about 10,000 tons annually.



VIEW OF SALT DITCHES AT LAGUNAS, CHILE.

"Ditches are cut in the surface of the 'salar' to a depth of 8 inches below the level of ground water. The ditches, exposed to the hot, dry sunshine and parched winds, act as very efficient evaporating pans, and the saline water underlying the 'salar' that is exposed in the ditches is evaporated to the point of saturation, when salt begins to crystallize out in the bottom of the ditches."

SHOVELING THE SALT FROM THE DITCHES.

"The salt is shoveled out on the ground between the ditches and there allowed to drain and dry, and is then packed in sacks holding 2 quintals, or about 200 pounds, each.

It is a rather curious fact that it has been found if the ditches are cut to more than 8 inches below ground-water level, salt will not crystallize. The explanation of this is simple. The very slow movement of the underground circulation is constantly causing some of the concentrated water to flow out of the ditches and more dilute water to flow in. Figure 2 shows, in a general way, the movement of the ground water in the immediate vicinity of a ditch. There is a general lateral movement and an upward component to replace the water lost by evaporation. Moreover, diffusion is always tending to equalize the concentration of the waters in the ditch and that of the surrounding ground water. These two processes are at work undoing what the solar evaporation is doing. Consequently evaporation must proceed at a rate sufficiently rapid to more than offset the dissipating influences of flow of ground water and diffusion. The amount of evaporation depends on the amount of surface exposed to evaporation and on the temperature of the evaporating liquid. The first factor is the same irrespective of the depth of the solution. The depth has an influence on the amount of evaporation in that the shallower the water the warmer it will get, and hence the greater the evaporation. But depth has a still greater effect on the rate of evaporation. If a given amount of water is evaporated per unit area of surface exposed, the rate of evaporation is only one-half as great in the case of a body of water 16 inches deep that it is in the case of a body only 8 inches deep. From these considerations it is clear that the rate of evaporation decreases more rapidly with increasing depth of solution than at a rate inversely proportional to the depth of the evaporating body of water. And this is the explanation of the failure of salt to form when the ditches are cut deeper than 8 inches—the rate of evaporation is cut down to such an extent that flow and diffusion are able to prevent the point of saturation being reached.

Another interesting point to note is that only within certain parts of the "salar" will salt form. Ditches cut outside of these areas remain full of water that never deposits salt. From this fact it would appear that the normal ground water is not sufficiently salt to concentrate rapidly enough to reach the point of saturation, and that the areas where the salt forms are underlain by beds of salt that raise the salt content of the water in their immediate vicinity.

QUININE--A SOUTH AMERICAN GIFT TO HUMANITY

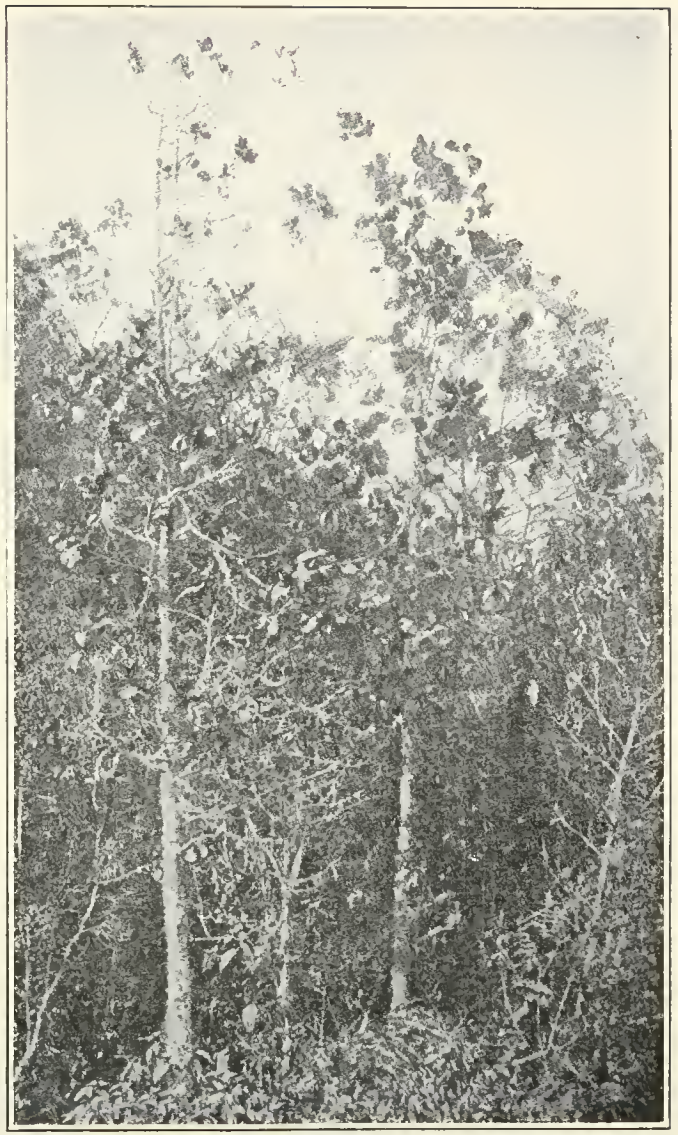
ONCE upon a time—278 years ago, to be more exact—in her viceroyal castle in Lima, Peru, a lady lay ill of a fever. She was the Countess Ana, wife of Don Luis Geronimo Fernandez de Cabrera Bobadilla y Mendez, fourth Count of Chinchon, a descendant of the proud and greatly noted Catalonian family of that name. News of the lady's illness having reached one Don Juan Lopez de Canizares, the Spanish Corregidor of Loxa, who dwelt some 230 miles south of Quito in what is now the Republic of Ecuador, he dispatched a parcel of a certain kind of powdered bark to her physician, Juan de Vega, with the assurance that it was a sovereign remedy and a never failing specific in cases of intermittent fever. He knew this to be true from both experience and observation, for about eight years prior to this event he had suffered from a severe attack of fever, and an old Indian of Malacotas had revealed the secret of the remarkable properties of this bark in curing him. Since then he had observed its effects in other cases—so he knew whereof he spoke. The remedy was tried, and the countess was cured. The name given by the aborigines to the tree on which grew this remarkable bark was "quina-quina." In the Quichua tongue—the language of the Incas—when the name of a plant was thus duplicated it indicated that it had some curative or medicinal properties.

FLOWER OF THE CHINCHONA TREE.

The leaves of the various species of the *Chinchonæ* are of great diversity; but in the finest and most valuable varieties they are lanceolate, with a shining surface of bright green, traversed by crimson veins, and petioles of the same color. The flowers are small and hang in clustering panicles, like lilacs, and are generally of a roseate color, paler near the stalk, dark crimson within the tube, with white curly hairs bordering the laciniæ of the corolla.

[1] By Edward Albes, of Pan American Union staff.

From an old sketch by Mr. Pritchett.



Courtesy of Popular Science Monthly.

TWO VARIETIES OF CHINCHONA TREES.

Left: *Chinchona Nitida*, a species found in the higher regions of the Province of Huanuco, in northern Peru, known by the natives as *quina cana legitima* (genuine gray bark). Right: Specimens of *Chinchona calisaya*, found largely in Bolivia, and which are now cultivated in India, Jamaica, Java, etc.

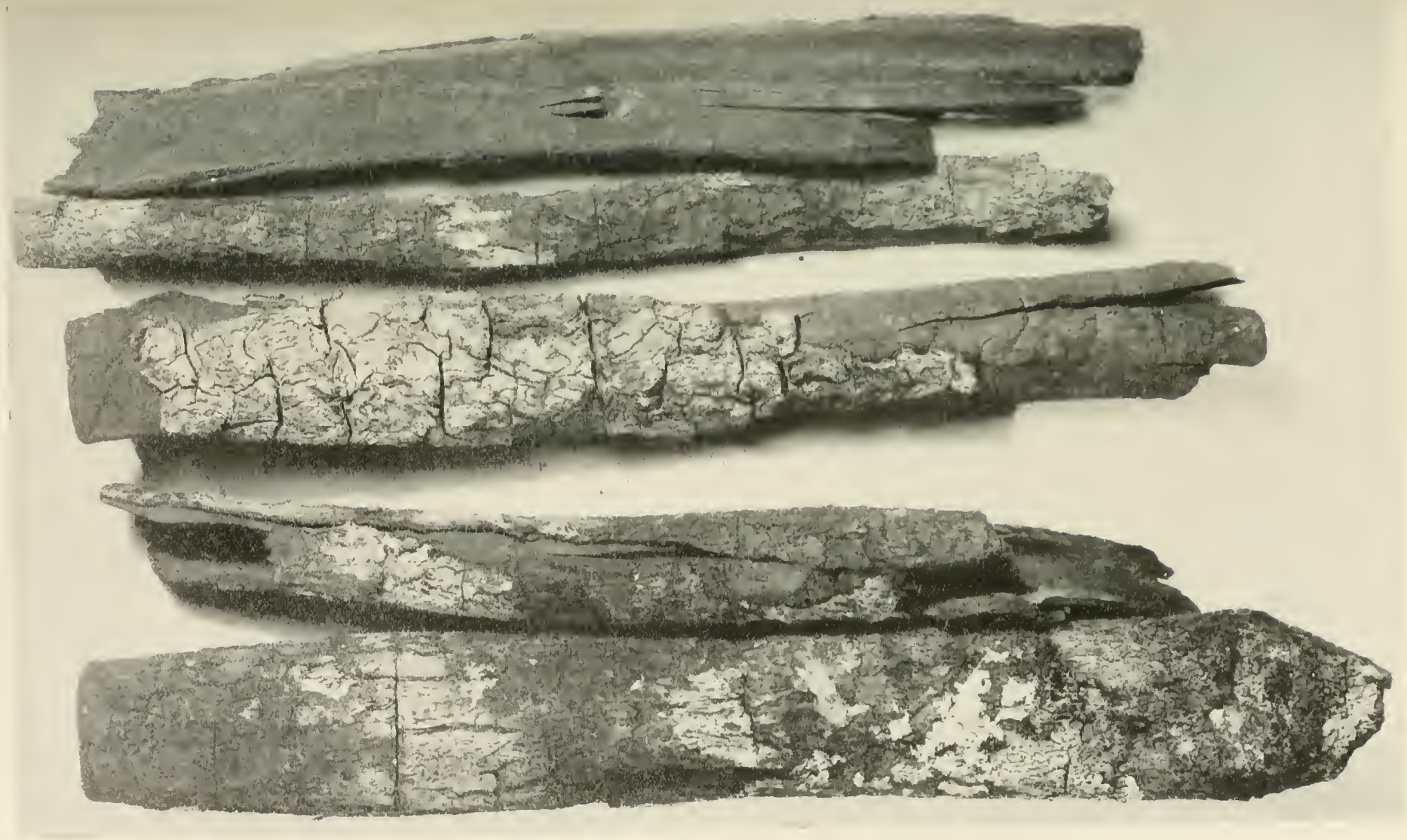
In 1640 the Count of Chinchon, who was at the time viceroy of Peru, returned to Spain with his wife, who took with her a quantity of the healing bark and thus was the first person to introduce this wonderful specific into Europe. Incidently it is said that her erstwhile physician, the Juan de Vega alluded to above, turned an honest penny occasionally by selling some of the bark at the rate of 100 reals per pound. Be that as it may, to commemorate the great service rendered mankind by the countess, Linnaeus, the great Swedish botanist, over a hundred years later, named the genus which yields the bark *Chinchona*, and subsequently still further immortalized the name by giving it to the great family of trees and plants now known as the *Chinchonaceae*, which includes not only the *Chinchonae* but also the ipecacuanas and coffees.

After the cure of the countess in 1638 her husband was instrumental in sending an expedition under Texeira, a Portuguese, from Quito to the mouth of the Amazon. In the party was a Jesuit priest, Acuña by name, who wrote an excellent account of the expedition, and incidentally also spread the knowledge of the curative properties of the bark among the brethren of the order. The Jesuits thus became instrumental in making it still further known. In 1670 some of these missionaries sent parcels of the powdered bark to Rome, whence it was distributed by the Cardinal de Lugo to members of the fraternity throughout Europe. It thus became known as "Jesuits' bark," or sometimes as "Cardinal's bark," one result of which nomenclature was that for a long time its use was opposed by many Protestants and correspondingly favored by Roman Catholics. As people grew in intelligence, however, and the fact dawned upon them that the religious tenets held by the purveyor had very little to do with the curative properties of a drug, this powdered bark began to be regarded as one of the greatest blessings known to man. Under the name of Peruvian bark, and sometimes "quinquina," its use gradually spread notwithstanding the violent opposition of certain thick-headed and ultra-conservative physicians, and by the middle of the eighteenth century its virtue was generally conceded by the best European medical authorities.

While the bark and its powdered form thus became well known, few knew anything of the tree from which it came. The first scientific description of the tree was given to the world as a result of that memorable French expedition to South America, headed by M. De la Condamine, which sailed from Rochelle in May, 1735, to measure the arc of a degree near Quito in order to determine the exact shape of the earth. In company with M. De la Condamine was one Joseph de Jussieu, a botanist, and it was he who set out in March, 1739, from Quito to Loxa to study the "quinquina" tree. The next year Condamine also went to Loxa and stayed for some time at Malacotas with a

A VIEW OF PAYTA, PERU.

"For over 125 years the 'quinquina' tree found in the forests of Loxa, named *Chinchona officinalis* by Linnaeus, was the only species with which botanists were familiar, and no other bark was known in the market except that which came from these forests to the Peruvian port of Payta, whence it was exported to all parts of the world."



CHINCHONA BARK, THE SOURCE OF QUININE.

Reproduced from a photograph of samples of chinchona bark on exhibition in the building of the Pan American Union at Washington. It was the powdered form of bark similar to this that in 1638 cured the Countess of Chinchon, wife of the viceroy of Peru, of a severe attack of fever. Upon her return to Spain in 1640 she took with her a quantity of the powdered bark, being the first person to introduce it into Europe. Over a hundred years later, in recognition of her service to humanity, Linnaeus named the genus which produces the bark *Chinchona*. Its active medicinal principle, extracted from it by a simple chemical process, is the sulphate of quinine.

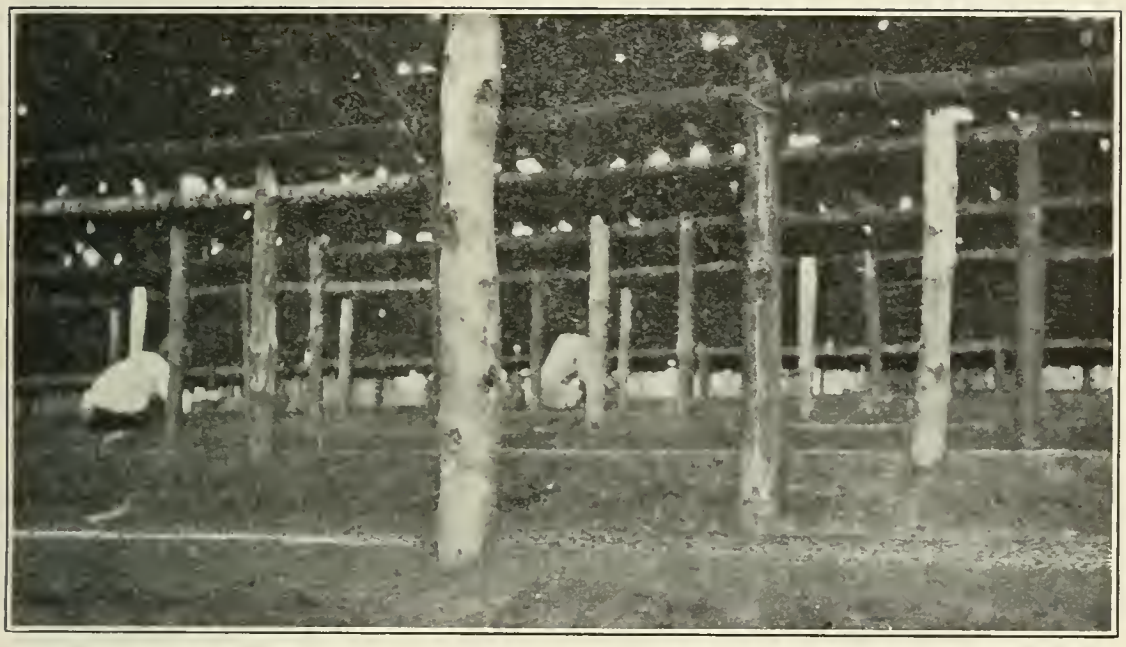
Spaniard whose chief business was the collection of the bark. In the "Mémoires de l'Academie" Condamine gave the first scientific description of the tree, and in 1742 Linnaeus established the genus *Chinchona*, as set out above. In recent years the name has been very generally misspelled by leaving the "h" out of the first syllable, thus defeating the very purpose Linnaeus had in mind—that of honoring the name of the lady who was directly responsible for the introduction of the valuable remedy into Europe.

For over 125 years the quinquina tree found in the forests of Loxa, named *Chinchona officinalis* by Linnaeus, was the only species with which botanists were familiar, and no other bark was known in the market except that which came from these forests to the Peruvian port of Payta, whence it was exported to all parts of the world. The high price at which it was sold led to great improvidence in the collection of the bark, the trees being felled in great numbers in order to obtain the product, while no measures were taken to replant. In 1795 Humboldt reported that 25,000 trees were destroyed in one year.

The Spanish Government, however, began sending exploring parties into the forests of other sections to search for the valuable trees. This finally resulted in the discovery of other species whose bark was found to contain the sought-for alkaloids, and thus the supply was increased.

Realizing that a continuance of this improvidence in the collection of the product would inevitably result in the final extinction of all of these species in their native habitat, the English Government commissioned Sir Clements Markham, who later became one of the world's greatest naturalists and travelers—and whose tragic death by fire occured in London January 30, 1916—in 1859 to conduct an expedition into the wilds of Peru, Ecuador, and Bolivia for the purpose of collecting seeds and plants of the various known species of chinchonæ for the purpose of introducing their culture into India. According to his observation and information gathered from reliable sources, as set out in his work, "Travels in Peru and India," the chinchona region of South America may be located geographically as follows:

Beginning from the south, it commences in the Bolivian province of Cochabamba in 19 degrees S., passes through the yungus of La Paz, Larecaja, Caupolican, and Munecas, into the Peruvian province of Caravaya; thence through the Peruvian forests, on the eastern slopes of the Andes, of Marcapata, Paucartambo, Santa Anna, Guanta, and Uchubamba, to Huanuco and Huamalies, where the gray bark is found. It then continues through Jaen, to the forests near Loxa and Cuenca, and on the western slopes of Chimborazo. It begins again in latitude 1° 51′ N. at Almaguer, passes through the province of Popayan, and along the slopes of the Andes of Quindiu, until it



RAISING CHINCHONA PLANTS FROM THE SEED.

Upper: Showing the seed beds protected by the removable bamboo shelters.
Lower: Seed beds with bamboo frames built around them, after the shelters have been removed.

reaches its extreme northern limit on the wooded heights of Merida and Santa Marta.

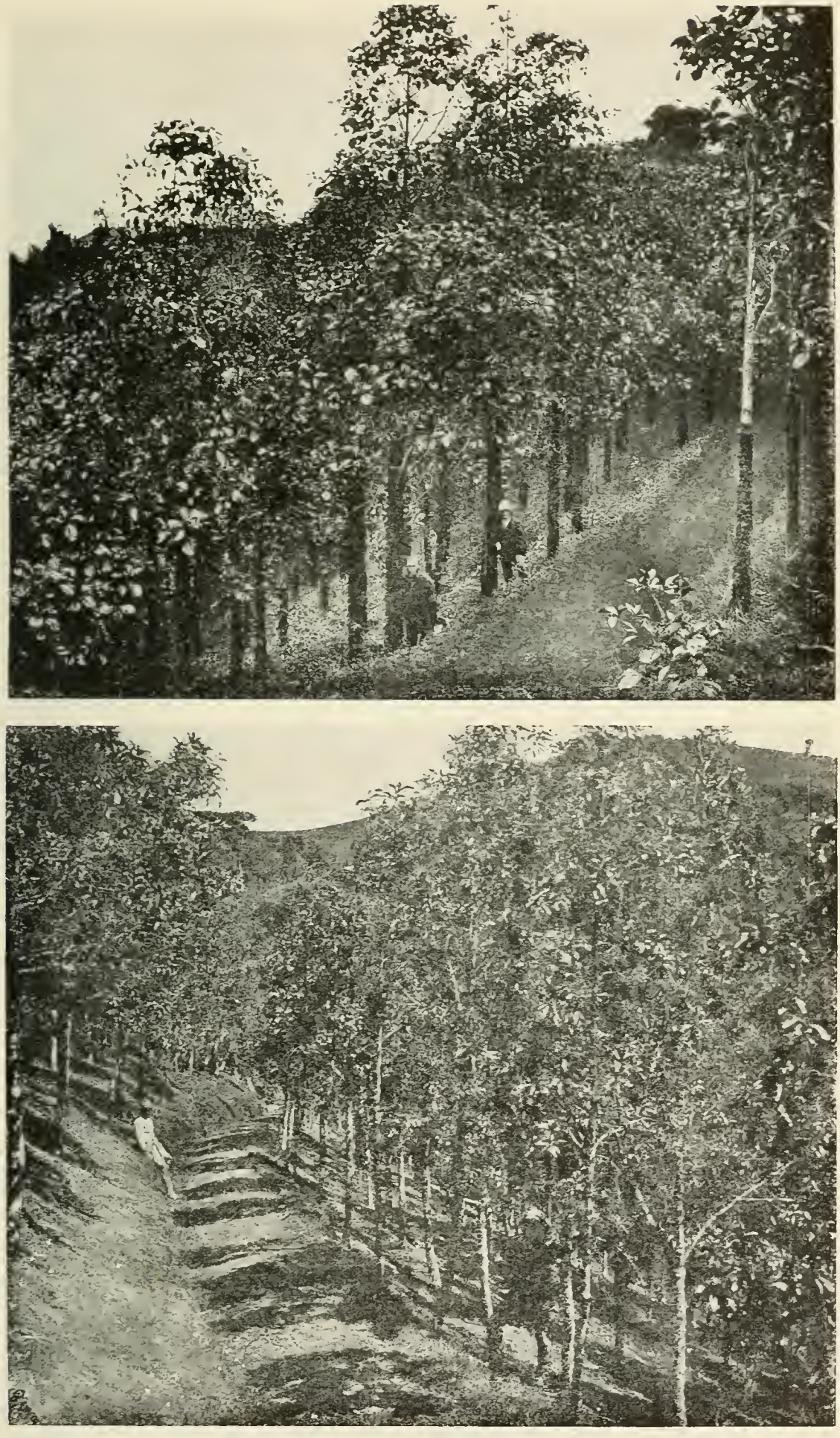
In the work alluded to Sir Clements Markham gives the following account of the trees and their habitat: They flourish in a cool and equable temperature, on the slopes and in the valleys and ravines of the mountains, surrounded by the most majestic scenery, never descending below an elevation of 2,500, and ascending as high as 9,000 feet above the sea. Within these limits their usual companions are tree ferns, melastomaceæ, arborescent passion flowers, and allied genera of chinchonaceous plants. Below them are the forests abounding in palms and bamboos; above their highest limits are a few lowly Alpine shrubs. But within this wide zone grow many species of chinchonæ, each within its own narrower belt as regards elevation above the sea, some yielding the inestimable bark and others commercially worthless.

The chinchonas, when in good soil and under other favorable circumstances, become large forest trees; on higher elevations, and when crowded and growing in rocky ground, they frequently run up to great heights without a branch; and at the upper limit of their zone they become mere shrubs. The leaves are of a great variety of shapes and sizes, but, in most of the finest species, they are lanceolate, with a shining surface of bright green, traversed by crimson veins, and petioles of the same color. The flowers are very small, and hang in clustering panicles, like lilacs, generally of a deep roseate color, paler near the stalk, dark crimson within the tube, with white curly hairs bordering the laciniae of the corolla. The flowers of *C. micrantha* are entirely white. They send forth a delicious fragrance which scents the air in their vicinity.

Sir Clements gives three distinct characteristics by which a true chinchona may be known, viz., the presence of curly hairs bordering the laciniae of the corolla, the peculiar mode of dehiscence of the capsule from below upward, and the little pits at the axils of the veins on the underside of the leaves. By these characters the chinchona may be distinguished from many trees which grow with it, and which are occasionally mistaken for it.

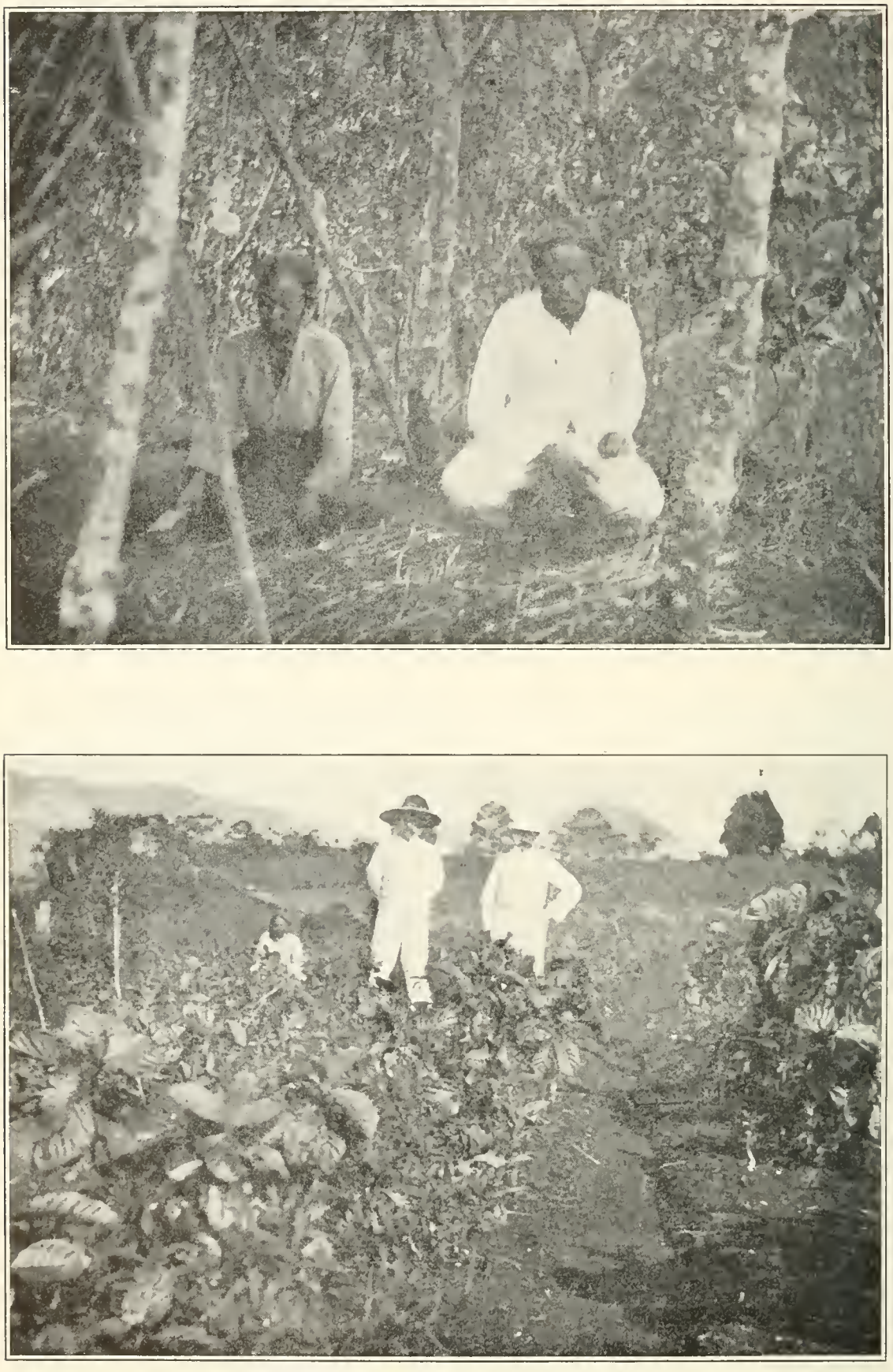
Dr. Weddell gives a list of 73 plants which were once received as *Chinchonae* but which have since been more properly classified, leaving about 19 true species with 2 classed as doubtful. Not more than 9 of these are commercially valuable, however, and from these some 5 or 6 different kinds of bark are procured. These medicinal barks are usually classified as Red, Crown, Carthagena, Grey, and Yellow, and originally came from five different regions of the South American chinchona territory.

Until about the beginning of the nineteenth century chinchona bark was used in its crude powdered state, although many attempts



CHINCHONA PLANTATIONS IN INDIA.

Upper: A plantation of *Chinchona succirubra*, planted in 1862 and photographed in 1876, having grown from small plants to heights varying from 34 to 40 feet in 14 years. The plants were among those secured by Sir Clements Markham on his famous expedition to Peru, Ecuador, and Bolivia, and subsequently taken to India for transplantation. Lower: A plantation of *Chinchona officinalis*, planted in the spring of 1863, also from Markham's collection, having reached a height of from 24 to 30 feet in 14 years.



SCENES ON A CHINCHONA PLANTATION.

Upper: Natives first loosen the bark by beating it with a wooden mallet, when it is easily stripped from the tree or branches. Lower: Young plants of *Chinchona succirubra*.

had been made to discover the actual healing principle contained therein. In 1815 Reuss, a Russian chemist, gave a fairly good analysis of the bark, and at about the same time Dr. Duncan, of Edinburgh, suggested that it contained a real febrifugal principle. Dr. Gomez, a Portuguese naval surgeon, is said to have been the first to isolate this principle, which he called *chinchonine*, in 1816. It remained, however, for the French chemists, Pelletier and Caventou, to discover in 1820 that the febrifugal principle was seated in two alkaloids in the different kinds of bark. To these the names *quinine* and *chinchonine* were given, the former being regarded as having the more powerful virtues.

According to Markham, the organic constituents of the various chinchona barks are quina, chinchonia, aricina, quinidia, chinchonidia, quinic acid, tannic acid, kinovic acid, chinchona red, a yellow coloring matter, a green fatty matter, starch, gum, and lignin. These materials are contained in different proportions in the various barks. The gray bark contains chinchonine and tannin; the Calisaya or yellow bark contains much quinine and but little chinchonine; the red bark has quinine and chinchonine in about equal proportions; the others contain chiefly chinchonidine and quinidine. As a febrifugal principle chinchonidine is second only to quinine.

Quinine may be described as a white substance, without smell, bitter, fusible, crystallized, with the property of left-handed polarization. The salts of quinine are soluble in water, alcohol, and ether. Of all the salts the bisulphate is generally preferred because it constitutes a stable salt, easy to prepare, and containing a strong proportion of the alkaloid. It is very bitter, and crystallizes in long silky needles.

Chinchonine differs from quinine in being less soluble in water, and altogether insoluble in ether. It has the property of right-handed polarization.

Quinidine also has the property of right-handed polarization, and forms salts like those of quinine. It becomes green by successive additions of chlorine and ammonia.

Chinchonidine has not the property of turning green, and forms a sulphate almost exactly like sulphate of quinine.

The processes employed in the extraction of the sulphate of quinine from the various barks vary in different countries, but the following method may be taken as typical:

From a strong decoction of the bark in water, acidulated with hydrochloric acid and filtered, the quinine may be set free from its combination with kinic acid and precipitated by addition of lime water; some lime combined with coloring matter falls with it. The precipitates are well washed with water, and the residuum is pressed, dried, and pulverized. It is then repeatedly treated with alcohol,

Photo by Brown Bros., Atlanta, Ga.

CHINCHONA TREES IN JAVA.

In 1852 M. Pahud, the Dutch minister of the colonies, employed a German botanist by the name of Justus Charles Hasskarl to collect seeds and plants of the valuable species of *Chinchonæ* to be found in Peru and neighboring countries, with the purpose of introducing their culture into Java. After two years of arduous labor Hasskarl succeeded in gathering specimens of several varieties, some of which subsequently proved worthless and many of which died before he could get them to their destination. A few, however, survived and were successfully planted in the experimental gardens and became the nucleus for the great chinchona plantations of Java. The trees shown in the above picture, of the species *Chinchona succirubra*, are said to be the largest that have ever been grown on plantations.

which dissolves the quinine and leaves most of the impurities. These being eliminated, the solution is concentrated by evaporation to a brown viscid mass, which is impure quinia; or the tincture in the distilling vessel may be neutralized with sulphuric acid, and the alcohol being then distilled off, an impure sulphate is obtained which crystallizes on cooling. This is expressed, and then dissolved in boiling water to which purified animal charcoal has been added. It is filtered while hot, and then allowed to cool and crystallize. The purification is completed by again dissolving and crystallizing the product.

Of all drugs that have come to be recognized as almost positive specifics in certain diseases quinine is doubtless the most universally known. As a febrifuge it has become a necessity to the civilized world, and while its value as a therapeutic agent has been known from the time of its introduction into Europe it is only within the last 25 or 30 years that its action as a preventive in malarial and other intermittent fevers has been definitely understood. It was not until the fact that malarial infection is due to mosquitoes was discovered that the action of quinine in preventing recurrent attacks of fever was exactly comprehended. Just how the female mosquito transmits the fever from one person to another and how quinine kills the fever germ is well brought out in an article which appeared some time ago in the Illustrirte Zeitung, of Leipsic, written by the German physician, Dr. Boehm, from which the following translated excerpts are taken:

When a mosquito stings a human being suffering from malaria, it takes into its system certain parasites existing in that person's blood. In the mosquito's stomach the parasites perform the act of pairing. The pregnant female parasite penetrates through the inner coating of the mosquito's stomach and on the outer coating deposits a lot of tiny cells which produce billions of thread-like germs. The cells burst, the germs become free, and find their way to the gnat's salivary glands. If this mosquito stings a second human being, it infects that person's blood with the germs. They work into the blood corpuscles, feed on the substances contained therein, and grow rapidly until they fill up almost the entire number of discs forming the corpuscles. During this period of incubation the individual stung is not afflicted with fever, the first attack occurring only when the growing parasite splits up into a large number of germs. Seen through a microscope the parasite at this time somewhat resembles a daisy. After the splitting up is actually effected the germs rush out into the human's flowing blood, and with this event the attack of fever is connected. The emerged germs now penetrate into corpuscles still intact, where the process of growth and partition as already described is repeated.

A PLANTATION OF CHINCHONA SUCCIRUBRA, INDIA.

The natives are here seen gathering the bark. The laborer makes a horizontal incision of the required width, say an inch and a half or 2 inches, and from the ends of this incision he runs a vertical incision to the ground; then carefully raising with his knife the bark at the horizontal incision until it can be seized with the fingers he tears off the entire strip to the ground and cuts it off. About 2 inches of untouched bark is left between the spaces denuded of bark. After the removal of several strips from the tree it is wrapped with moss and new bark forms. In the picture the trees to the right show how the long strips of bark are removed and the appearance of the trees before they are mossed.

A CHINCHONA PLANTATION IN OOTACAMUND, INDIA.

The picture shows what is known as the "mossing" system employed in India for collecting and renewing the bark of the chinchona trees. This consists of taking off the bark in long, narrow strips, perhaps an inch and a half wide, leaving the intervening spaces of a little greater width untouched. The trunk of the tree, as far as the strips extend, is then wrapped and covered with layers of bark tied with fiber. The exclusion of light and air from the surfaces bared of bark acts in two ways; it enables a healing process to be rapidly set up, and it has the further effect of increasing the secretion of quinine in the bark renewed under the protecting moss. At the end of about 9 or 12 months the bands of bark formerly left untouched can be removed and the tree again mossed. At the end of 22 to 24 months the spaces once occupied by the strips first removed are found to be covered with renewed bark, which can than be removed. The process can be thus continued for many years.

The value of quinine as a remedy consists in the fact that at certain stages of their development the parasites referred to can be destroyed through the absorption of the drug into one's blood. It is especially efficacious if administered before a predictable attack of fever—that is to say, when an eruption of the germs is impending. With persistently continued treatment by quinine the attacks will become infrequent and finally cease altogether. Dr. Boehm considers the drug an indispensable curative and also believes in it as a preventive, experience in Germany's East African colonies having demonstrated the latter proposition.

The chinchona trees of Peru, Ecuador, Colombia, and Bolivia have become so scarce, through the long-continued practice of felling the trees to gather the bark, that the export of the product no longer forms an appreciable source of revenue to those countries. This deplorable fact is about to be emphasized in the United States as well as in other sections of the world. A shortage of this valuable remedial medicine is threatened, largely because of the European war. Since the introduction of the various valuable species of the chinchonae into Java by the Dutch and into India, Ceylon, and Jamaica by the English, tremendous areas planted with hundreds of thousands of these trees, carefully attended and cultivated by cheap native labor under the direction of skilled botanists and gardeners, have supplied the world with its most valuable medicine at reasonable prices for the last 40 years. The vast armies of the belligerent countries in Europe are now using up tremendous quantities of the drug. Naturally the supplies from India, Ceylon, and Jamaica are being carefully husbanded by Great Britain for her own armies and those of her allies. Doubtless the Central Powers are largely dependent upon the Dutch product from Java. The remainder of the world is thus being left to get its quinine where it can. The United States alone, during the year ending June 30, 1914, imported chinchona bark to the amount of 3,648,868 pounds, valued at $464,412, and sulphate of quinine and other alkaloids or salts of chinchona bark to the amount of 2,879,466 ounces, valued at $624,125. At the breaking out of the war the price was about 20 cents an ounce; a year ago it had risen to 40 cents, and to-day it is selling for $1.50 an ounce, wholesale. Whence and at what price will it be supplied during this year?

The success of the chinchona plantations in India, Ceylon, Java, and Jamaica has demonstrated the fact that a forest product can not compete in the markets of the world with the same product scientifically and economically produced in cultivated plantations. The cost of production of chinchona bark has been so greatly reduced in the countries named that the plantation product would doubtless have driven the forest product of South America out of the market,

A TEA AND CHINCHONA PLANTATION IN THE FAR EAST.

The chinchona plantation is shown in the background behind the building.

PREPARING CHINCHONA BARK FOR SHIPMENT.

After being dried the bark is crushed into small particles and then packed in sacks for shipment to European factories, where the sulphate of quinine is extracted by chemical processes.

even if greater care in conserving the trees had been exercised in the countries where they originated. The only solution of the problem for these countries seems to be the introduction of the plantation system. In Bolivia some German settlers started plantations some 15 or 20 years ago and, it is said, have met with considerable success. With the same scientific methods of cultivation and management employed in India and Java, there is no reason why the industry should not succeed in those sections of South America where the trees are indigenous.

That climatic, soil, and other natural conditions are better adapted to the growth of a tree or plant where it is native and has thrived for ages than in sections where natural conditions failed to produce it at all is a self-evident proposition. A tree in its native habitat has accommodated itself to its environment and to all inimical factors, such as parasitic enemies, irregularities in rainfall, etc., which in the case of the transplanted tree must be met by constant care and studied methods. The inference is legitimate, therefore, that chinchona trees can be easier grown in the sections of South America where they originated than elsewhere in the world.

The constantly increasing demand for quinine would seem to warrant energetic measures on the part of the Governments of Peru, Ecuador, Colombia, and Bolivia to induce the systematic cultivation of these valuable trees. The present shortage in the supply of quinine should prove an object lesson and arouse the people of those countries to the importance of regaining an industry which was once such a profitable source of revenue and whose future holds still greater promises.

PAN AMERICA IN THE MAGAZINES

Exploring a Spur of the Andes is the title of an article by Mr. Leo E. Miller in the November number of the American Museum Journal which describes that elevated section of the Andean Range in Colombia known as the Paramillo. Mr. Miller, whose work in exploring and in collecting specimens of the fauna of Colombia and various other South American countries for the American Museum of New York is well known to our readers, is again in the field, and his regular communications to the Journal will form an interesting feature of that publication during the coming year. While his work is specifically that of an ornithologist, his reports deal also with the geographic and topographic features of the little known and sometimes unexplored sections through which his work carries him, so that his observations cover a wide field and are of interest to the geographer as well as to the naturalist.

In the present instance Mr. Miller's expedition set out from Medellin on January 14, 1915, with an equipment sufficient for a three weeks' stay in the field. Stopping for the night at San Geronimo, the next day the party arrived at a small town, of which Mr. Miller writes:

> A few hours later, on crossing the top of a small ridge, we came suddenly upon the town of Sopetran, completely hidden in a fertile little valley filled with palms, mangoes, and other beautiful trees. The cluster of some hundreds of neat white houses with red tile roofs, the well-kept streets, and the multitude of birds fluttering among the deep green foliage render Sopetran quite the most attractive town of its size I have seen in tropical America.

Having crossed the Cauca River, the party reached Buritica January 16. The regular trails were followed until they came to the little village of Peque, on the 19th. Here was the end of the journey by mule, and after securing porters to carry their supplies and equipment the real ascent of the Paramillo began. The remainder of the trip is best told in Mr. Miller's own words:

> We secured four half-breed porters to carry the equipment and, as there was no trail to the Paramillo, a fifth man was engaged to go in advance and clear an opening with his machete. On the 21st we started at 6 in the morning, following a short trail that led to a lonely hut known as El Madeiro. This three hours' walk took us through country covered with large areas of tall brush, blackberry briers, and guavas, with occasional patches of forest, some of which had recently been burnt.
>
> Arriving at El Madeiro (8,000 feet), we plunged into the magnificent forest, going in a due westerly direction. It was our plan to follow along the top of an undulating ridge, which one of the men said was the shortest and easiest route. He knew from experience, having once visited that region some 16 years before. * * *
>
> At first the forest was fairly penetrable, but soon it assumed the character of the well-known San Antonio (above Cali) jungle, being composed of a solid wall of moss,

Courtesy of The American Museum Journal.

A CLOUD-CAPPED SPUR

"At one time on the way to the Paramillo, camp was made at an altitude of 10,000 feet after a climb

OF THE ANDES.

of 5,000 feet in eight hours. After leaving this camp the expedition was without water for two days "

Courtesy of The American Museum Journal.

PORTERS CARRYING THE EXPEDITION'S EQUIPMENT.

"It was the duty of one to go in advance and clear an opening through the forest with his machete. In some places every foot of the way had to be cut; in others the party actually walked over the tops of the vegetation, a solid tangle of creepers, climbing bamboo, bromelias, and mosses, which formed springy aerial bridges."

Courtesy of The American Museum Journal.

A LOFTY SPUR OF THE ANDES.

"The Paramillo (Antioquia, Colombia) is composed of a series of sharply inclined peaks, the highest reaching an elevation of 13,000 feet, interspersed with ravines and deep fissures. The mountain sides are covered with typical paramo vegetation, frailejones, blueberry bushes, and tough grass, with moss-grown bushes and stunted trees in the ravines. Birds were scarce and extremely wary—finches, honey creepers, tapacolos, cotingas and flyeatchers, hummers, towhees, and tanagers."

ferns, creepers, and epiphytes which burdened every tree trunk and branch. Many birds, such as wood hewers, yellow-headed tanagers, parrots, and blue-throated jays were observed, among them a number of species common at Santa Elena.

On account of the long climb, we made camp at 3 o'clock, at an altitude of 10,000 feet, having ascended 5,000 feet in eight hours' marching. Water was obtained in a ravine over 1,000 feet lower down on one side of the ridge, and I may here add that this was the only water we had until reaching the Paramillo, so that we went nearly two whole days without drinking.

The second day's march we had hoped would be over a gentler slope; but it was soon discovered that our ridge was composed of a succession of knolls rising from 500 to 1,000 feet above the mean level, and the forest grew denser constantly. We had to cut practically every foot of the way. In places we actually walked over the top of the masses of vegetation; the branches were a solid tangle of creepers, climbing bamboo, bromelias, and mosses, and formed springy aerial bridges. More often it was easier to burrow through, and frequently "tunnels" many yards long were cut, through which the carriers crawled on hands and knees. The tops of some of the hills were void of trees, their place being taken by a dense growth of grasslike bamboo, wild oleanders, thick-leaved shrubs, and thickets of a tall, coarse grass with leaves 8 feet tall and 6 inches wide. We camped this night at 11,350 feet up. The men eagerly cut down clumps of bromelias, hoping to obtain water, but all that the leaves contained were a few drops of liquid mud, utterly unfit for use. Although we traveled steadily for 10 hours, I doubt if we covered more than 3 miles.

A few hours after starting on the morning of January 23, we emerged suddenly from the dark forest. Instead of the tall, overburdened trees, there were extensive areas of bushes, evergreens, stunted pines, and plants with thick, round, rubbery leaves, interspersed with clumps of tall, rank ferns. Beyond stretched the bleak, wind-swept surface of the Garam.

The Paramillo region is composed of a series of sharply inclined peaks, the highest of which attains an elevation of 13,000 feet, interspersed with ravines and deep fissures. The surface consists mainly of dark sandstone, which in many places has been shattered so that a thin litter of particles covers the fundamental rock. Occasionally a thin vein of white quartz crops out, especially where, as often occurs, the strata stand in a perpendicular position. Water is scarce. We discovered but one small, trickling brooklet; but at the bottom of one of the crevices several potholes were found, each containing several hundred gallons.

At night the temperature fell to 28°, and ice formed in our pails half an inch thick; in the morning the ground was white with frost. The vegetation is of typical páramo character, consisting of low clumps of frailejones, blackberry bushes, and tough grass. In the ravines grow thick bushes and stunted trees, all heavily moss-covered.

Birds were extremely scarce and, strange to say, exceedingly wary. The typical slaty finch of Santa Isabel and two species of honey creepers were by far the commonest, followed by a small, slaty tapacolo. Then there were white-throated hummers and flycatchers. The finches (including goldfinches), honey creepers, tapacolos, cotingas, and flycatchers seem to belong strictly to the páramo; the hummers, towhees, and tanagers it seems come only from the forests below.

It is difficult to guess just where this typical páramo bird originated. On all sides, excepting a break toward the west, Paramillo is surrounded by ridges, some reaching an elevation of 12,000 feet, the tops of which are covered with dense forest, so that it stands like a mountainous brown island amid the sea of green.

One of the most interesting of the series of articles now appearing in the French edition of the Bulletin on **The Cathedrals of the New World** is the one dealing with Mexico in the December number.

Photo. by M. A. Broquet.

THE CATHEDRAL OF MEXICO CITY.

The cathedral occupies the site of an ancient Aztec temple. The corner stone of the present structure was laid in 1573 and the building was dedicated in 1667. Its cost, exclusive of ornamentation, has been estimated at $2,000,000. The gold and silver ornaments of the interior are estimated to have cost $1,800,000. The twin towers are 204 feet high, and the ground space occupied by the cathedral is about 400 by 200 feet.

THE CATHEDRAL OF GUADALAJARA, MEXICO.

The original cathedral succeeded a primitive church thatched with straw. The present edifice was begun in 1571 and dedicated in 1618. The steeples are 225 feet high. A distinctive feature of this church is that the choir, instead of occupying the central nave as in other churches, is placed at the back of the high altar. This gives an unobstructed view of the whole interior. The greatest attraction of the church to visitors is the painting of "The Assumption of the Virgin," by Murillo, which hangs over the sacristy doors. The great altar of imported Italian marble cost $50,000.

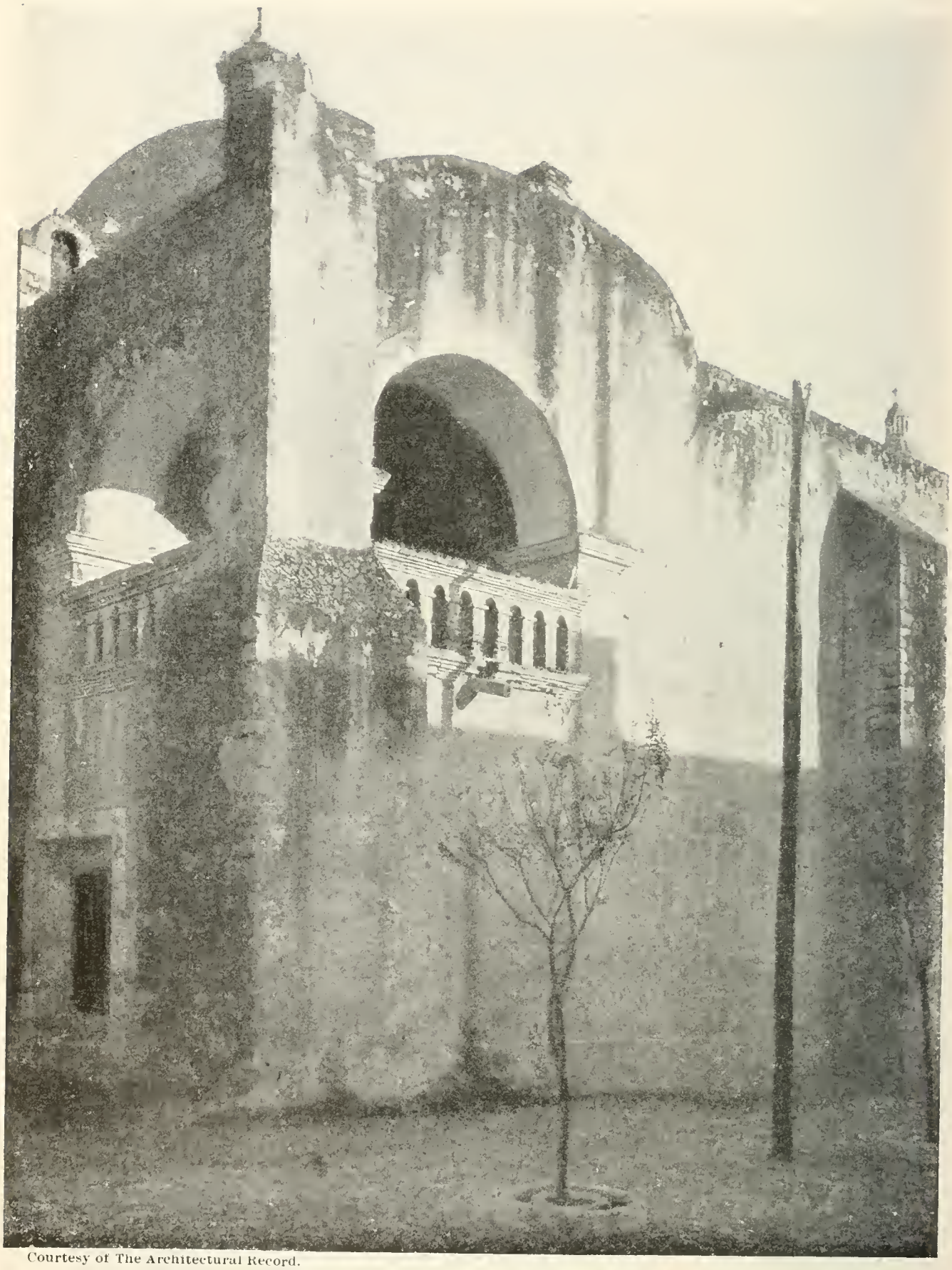
Photo by C. B. Waite.

THE CATHEDRAL OF MORELIA, MEXICO.

Begun in 1640, finished in 1744. One of the most venerated objects of the cathedral is the solid silver baptismal font in which were baptized Morelos, the hero of the revolution, and also the Emperor Iturbide.

THE CATHEDRAL OF CUERNAVACA, MEXICO.

The cathedral was founded by Hernando Cortes between 1529 and 1531 and is a fine type of Spanish colonial architecture. There formerly hung in the tower of the cathedral a clock, presented by Charles V of Spain, which is said to have kept good time for 300 years.



Courtesy of The Architectural Record.

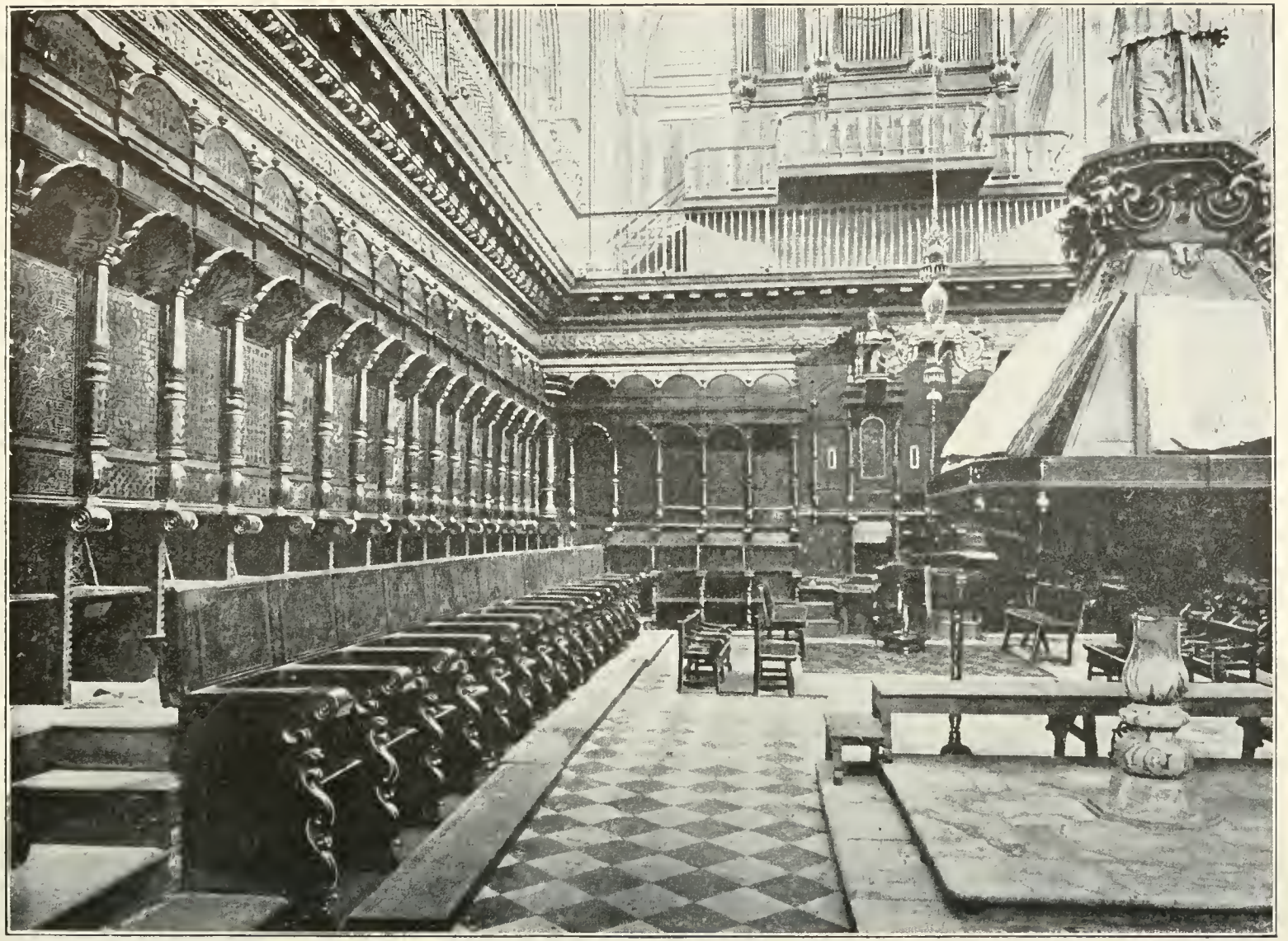
BALCONY OF THE CUERNAVACA CATHEDRAL, MEXICO

A very curious ceremony takes place yearly in the yard under this balcony. It is the "blessing of the animals," founded on the tradition that St. Anthony, when Satan tormented him by sending a multitude of fiends transformed into all kinds of beasts, blessed the animals.

CATHEDRAL OF MONTEREY, MEXICO.

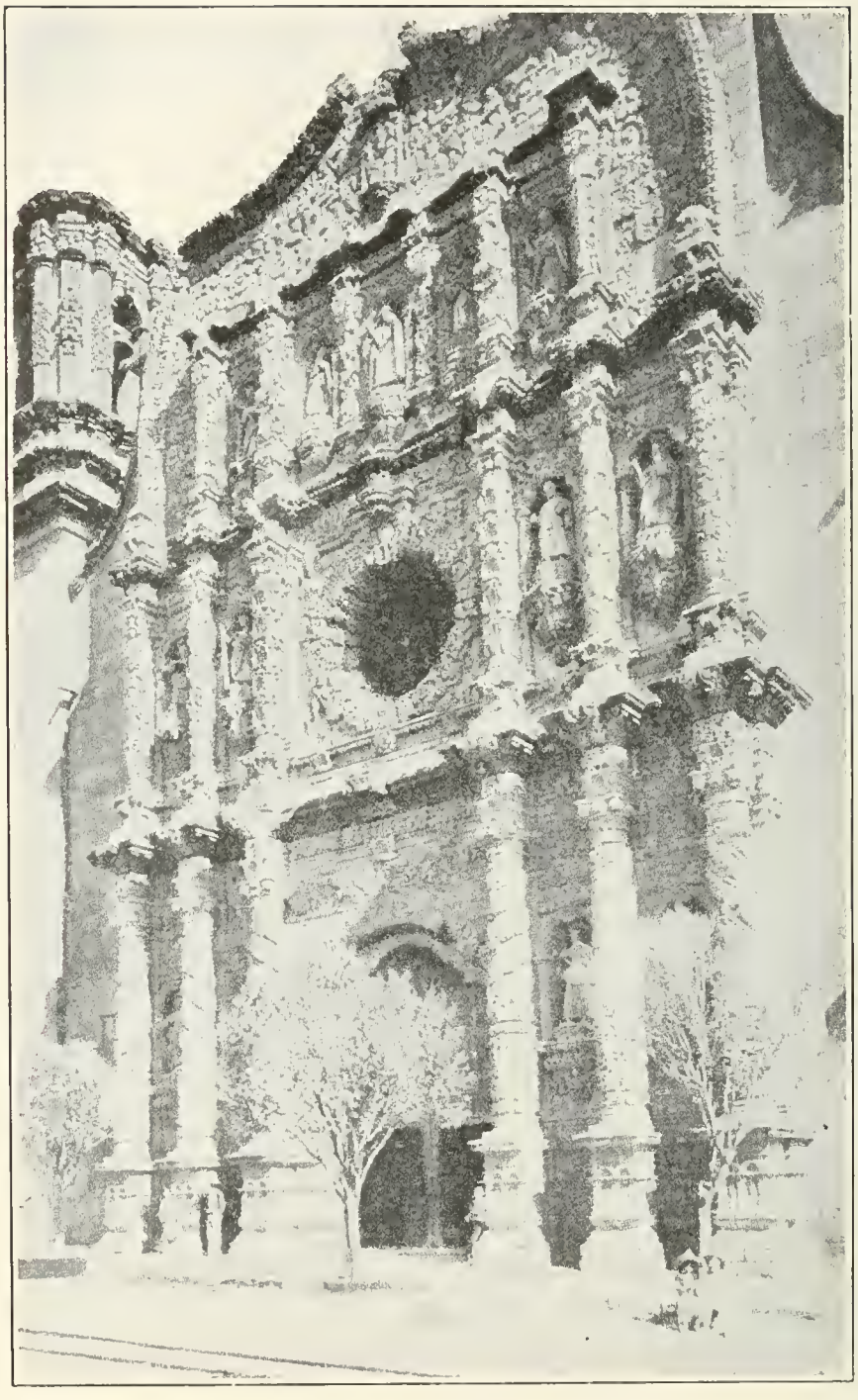
CATHEDRAL OF PUEBLA, MEXICO.

Begun in 1553 and consecrated in 1649. Among the most notable objects are the tapestries in the sacristy.



CHOIR OF THE PUEBLA CATHEDRAL, MEXICO.

CATHEDRAL OF DURANGO, MEXICO.



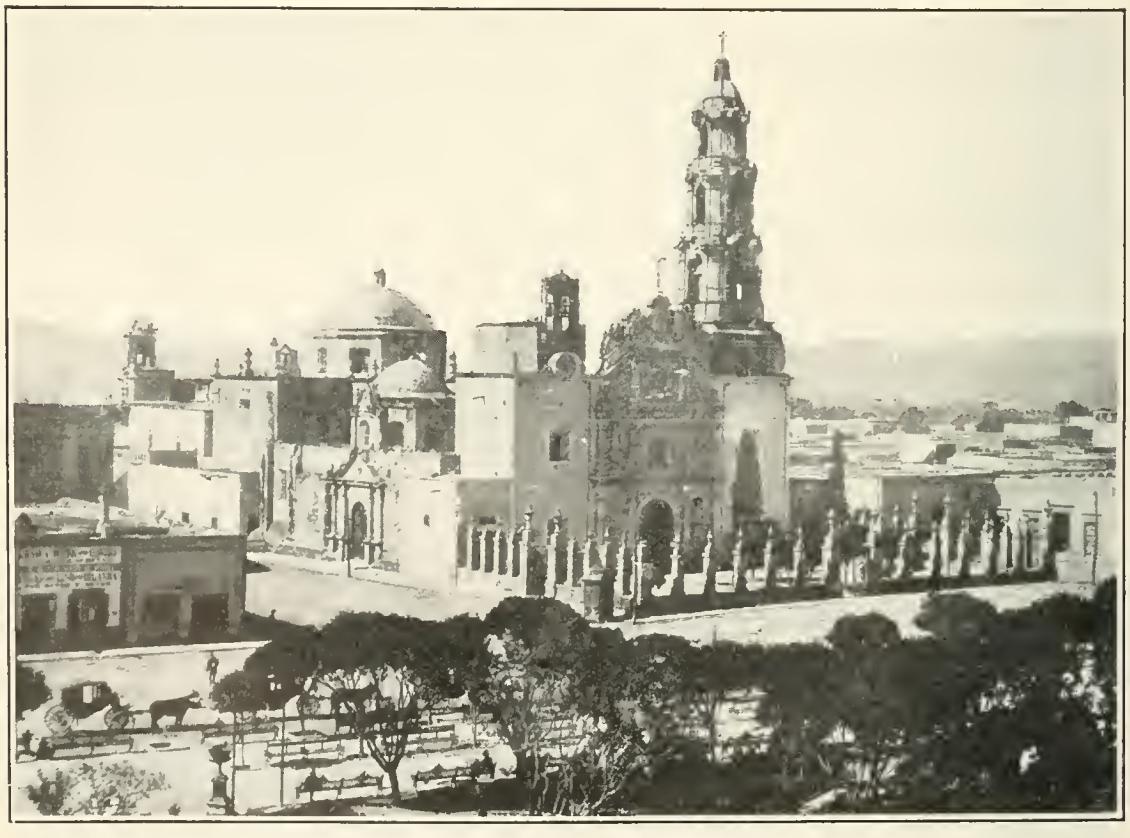
CATHEDRAL OF ZACATECAS, MEXICO.

Begun in 1622 and dedicated in 1753. It was formerly the church of Our Lady of the Assumption and was erected into the cathedral church in 1862.

CATHEDRAL OF HERMOSILLO, MEXICO.

CATHEDRAL OF OAXACA, MEXICO.

CATHEDRAL OF CHIHUAHUA, MEXICO.



CATHEDRAL OF AGUASCALIENTES, MEXICO.

Marvelous as was the progress of Spanish armies under Cortez in the conquest of the Aztec Kingdom of Mexico, it was less marvelous than the more peaceful conquest by those intrepid soldiers of Christ who carried His Cross far beyond the outmost limits of the Aztec Kingdom and far beyond the farthermost reach of Spanish military power. The missionary was the true conqueror of Mexico as he was of all Spanish America, but in Mexico his work bore earlier and fuller fruition than elsewhere on Terra Firma. Next to the saving of souls, and an integral part of the plan for accomplishing this object, the Spanish padre's first thought was given to constructing a beautiful and commodious House of God. A monument to the Faith as well as a place of worship was always in his mind. This thought was easily assimilable by the Mexican Indian's mind, for his own pagan religion was in its essence reverential and monumental.

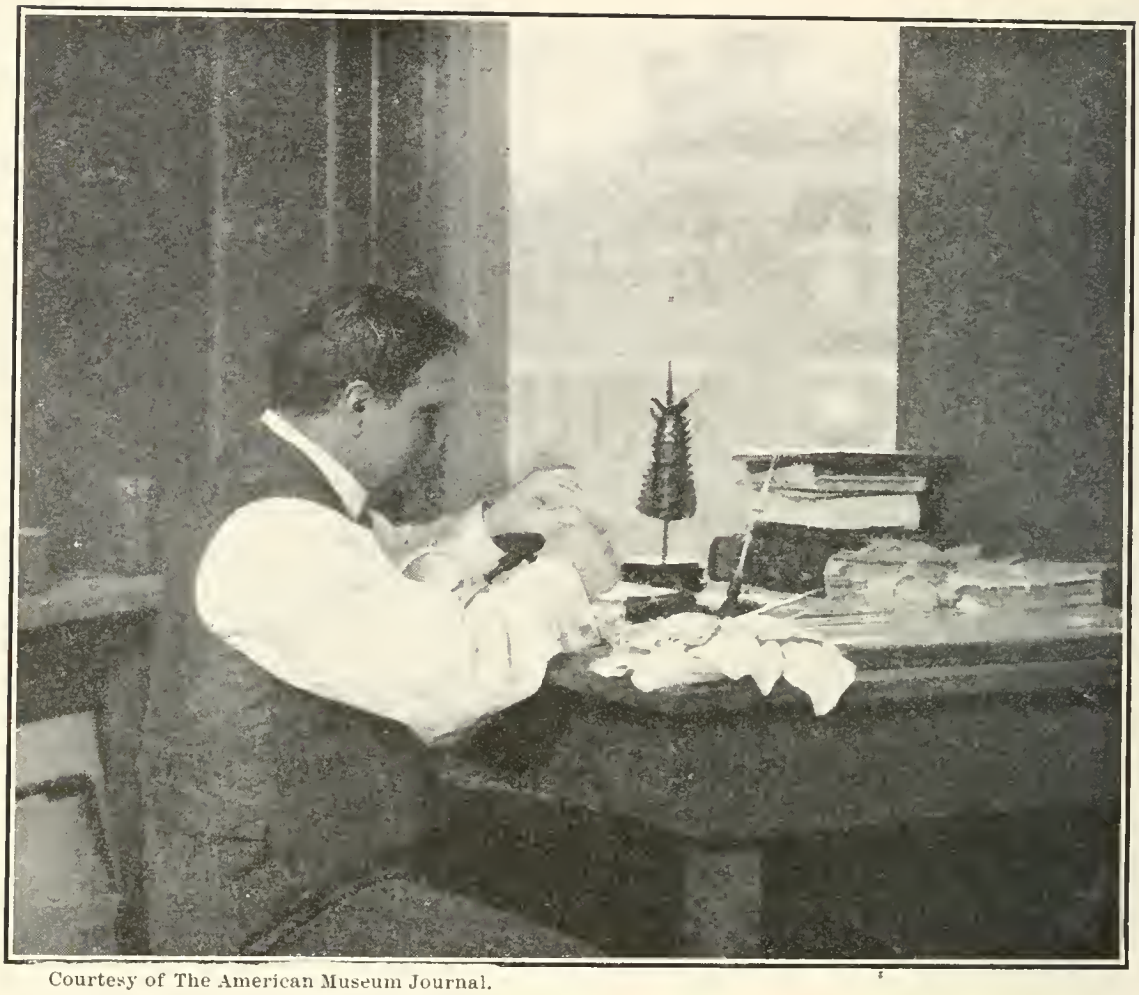
Of many if not of most of the early Mexican churches the priest was the architect and always the Indian was the artisan.

In many ways the most remarkable of the Mexican cathedrals is that of Mexico City, the Metropolitan Church.

It was first built in 1524 and was made the cathedral in 1530 and in 1547 became the Metropolitan Church of Mexico. In a few years the building ceased to give satisfaction either to the clergy or to the people, and the Spanish Crown was frequently petitioned for help towards the erection of an edifice more in keeping with its importance as the central church of the viceroyalty. In 1552 Philip II, then Regent of Spain in the place of his father Charles V, dispatched orders to the Viceroy Luis de Velasco to proceed to the erection of a new cathedral. In 1553 the corner stone was placed on a site immediately adjoining the old cathedral. The old building was used until 1626, but the new cathedral was not finished and dedicated until 1667. It was therefore 114 years in the building.

Glass Models of Animals, in the December number of the American Museum Journal (New York), is an article in which Mr. Herman O. Mueller describes the methods employed in making glass models of certain intricately constructed and in many instances very small and fragile animals, such as radiolaria and protozoan types generally. Remarkable reproductions of animals whose parts are visible only under a powerful microscope are thus made by the skillful glass blowers who are employed by the American Museum. Animals of larger type are of course more easily reproduced. In describing the process Mr. Mueller writes of the art of the glass blower as follows:

> The invention of the blowpipe at the early date of the first century before Christ opened up an era for glass modeling. In the process previous to that time molten glass or "glass paste" had been molded free-hand over a clay form, which could easily be removed after the glass cooled



Courtesy of The American Museum Journal.

A MAKER OF GLASS ANIMALS AT WORK.

The blast lamp is an essential part of the equipment, but the trained eye and hand of the worker are his most important tools.

Courtesy of The American Museum Journal.

FAUNA AND FLORA EXHIBIT MADE OF GLASS.

Glass model of a jelly fish forming part of the wharf-pile group in the Darwin Hall of the American Museum of Natural History, in New York. The two squids shown in the picture and the colonial hydrozoa attached to the wharf pile are also fashioned in glass.

The blowpipe consists of an iron tube about 1½ inches long and 1⅓ inches in diameter, with the aid of which the glass paste is blown to the desired shape. The mechanical tools which the glass blower uses have always been very simple and relatively unimportant, but the natural instruments—the eye and the hand of the worker—are of the greatest significance.

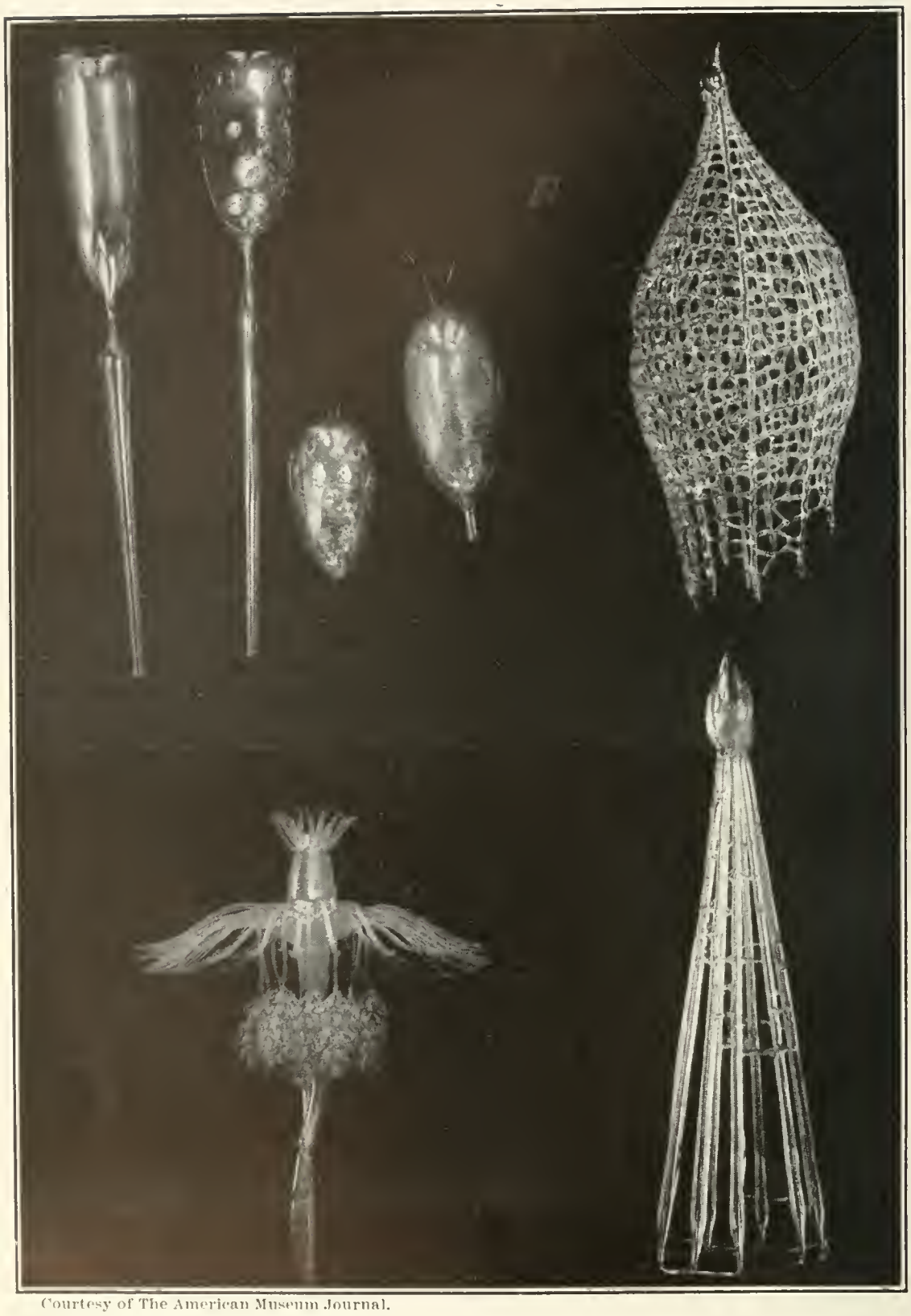
The most important instrument in glass blowing is the blast lamp. This is a very simple affair and consists of a brass tube about three-quarters of an inch in diameter and 3 to 4 inches long, into which a smaller tube is inserted. The larger tube supplies the gas and the smaller one the air. The relative quantity of gas and air is regulated by means of cocks attached to the tubes. A steady air pressure to increase the heat intensity of the flame is created by means of bellows, or still better by a compressed-air pump.

In early times an oil lamp was used in this apparatus, and the name "lampen arbeiter" (lamp worker) was applied to the users to distinguish them from the workers in the glass factories. In some of the European glass-blowing districts the oil lamp is still used for glass blowing. The gas lamp, however, is of course far superior. It naturally produces a more powerful flame, and this makes possible the modeling of much larger objects. Other tools for glass modeling are forceps of various shapes, scissors, carbon and iron pencils of different sizes and forms, and files. The forceps are used for handling the separate pieces of glass while being welded; the scissors are used for cutting away the superfluous glass; the carbon and iron pencils for widening the openings in glass tubes or finished parts, and the files for cutting glass tubes and rods. No iron molds of any kind are used for preparing glass models in the American Museum, but all parts are shaped free-hand from glass tubes and rods. Colored glass is frequently used for the colored parts, but if the desired tints and shades of glass are not available, plain crystal glass is molded into shape and the colors applied later with the brush or with an air brush.

The process of using glass as a medium for representing animals will be realized in some degree if we follow the construction of a glass model, for example, of a colony of the protozoan *Gonium*. From a glass tube of about one-half inch diameter, a piece about 2 inches long is separated by means of the blast lamp, blown in the flame to a cup-like shape and opened out to its whole width at one end. The glass flame is brought into action on the opening and the force of the flame will by itself enlarge the opening; but if the carbon pencil is rotated inside the heated area at the top of the cup this will flange it out more quickly.

To imitate the coloring seen in the living *Gonium* individual, which seems to shade from a deep green below to a light, almost transparent, tint above, hundreds of little green glass particles are welded to the inner surface of the glass cup before it is widened out, until the desired tints are secured. To do this, a green-colored glass rod is broken up into small pieces, and these are further ground in a mortar to the desired grain. A small quantity of these particles is strewn inside the cup, which is then rotated in the gas flame until the green parts begin to fuse and adhere to the wall of the cup. This process is repeated until the desired intensity of the color is secured. When the green particles are applied thickly, the color is more intense; when scattered, a lighter tint results.

After this, the other parts of the animal, such as nucleus, vacuoles, and chromatophores, are fashioned separately from small tubes or solid rods of colored glass and fastened within the cup. The nucleus is blown from a small green glass tube into a hollow ball about one-quarter inch in diameter. One end is cut open for inserting the nucleolus, which has been previously shaped from a green rod into a little solid bead. This is of a darker color than the tube used for the nucleus. To the solid bead, or the nucleolus, a short glass stem is attached, by which it is to be supported within the hollow ball. When the nucleolus is inserted into the ball, a little spot of the shell of this ball is heated, and the support of the nucleolus is fused to the wall of this shell.



Courtesy of The American Museum Journal.

THE VARIOUS STAGES OF OPERATION IN GLASS-BLOWN ANIMALS.

"The upper left picture illustrates the modeling in glass of the microscopic animal Gonium. These little, single-celled creatures live in colonies of 16 together, and there may be very many such colonies in a drop of water. On the right is a model of a radiolarian, highly magnified. When these minute organisms die their skeletons collect on the sea bottom, forming a siliceous ooze. The island of Barbados, an elevation of the sea bottom, consists very largely of this radiolarian ooze, and Barbados earth is used by jewelers for grinding and polishing. The lower left picture represents a highly magnified specimen of the hydrozoan Tubularia harrimani. Welding the fine, threadlike cilia involves great difficulty; a very little careless manipulation will cause the blast lamp to mow down whole areas of them. On its right is shown the early stage in the modeling of a simple radiolarian."

Then the opening of the shell is covered with enough hot glass to close it, and the nucleus is completed. The vacuoles are blown in the same manner as the nucleus, only they are of crystal glass and consist of only one shell. Nucleus and vacuoles have little stems attached to them by which they are fastened in the cup.

After all the parts are ready to be inserted in the cup, one after the other, they are held in place by the forceps, a small area of the outer wall of the cup is heated and the supports of the parts are fused to the inner wall. When this is done, the cup is closed by heating the glass around the rim opening and drawing it together until a rough closing is obtained. The superfluous glass which forms in this manipulation is pulled away little by little, and the resulting unevenness is smoothed out by reheating the closed portion and blowing several times through the hollow handle at the base of the cup. The air blown through the handle expands the heated glass and rounds off the cup. Then two short glass stumps (to which later flagellae are to be attached) are fused to the top. Finally the point at the lower end where the cup was attached to the original tube is melted off and a short glass stem to serve later for the concealed attachment is fastened in its place but a little to one side of the axis. Following this a somewhat larger cup is made and the finished closed cup is inserted into it, the outer cup is in its turn closed and rounded off, and to this finally the two whiplike flagellae are attached. These are first drawn out from a glass rod into straight threads about the thickness of a fine needle, and then are curved by passing the glass threads through the flame several times in different directions. Now, the glass stem retained at the lower end of the outside cup for a handle is cut off short to serve as a concealed support for attachment to the final mount. Models for the other 15 individuals composing the colony are now constructed in the same way and arranged on the mount in their proper places and the model is complete.

The making of these models often requires the most skillful and delicate manipulation, as may be seen from the following comment:

Many protozoa are beset with countless hairs or cilia, and in representing these the welding of such closely set fine structures on the models involves great difficulty. Even on models representing great magnification these cilia are often so fine that a little careless manipulation with the blast lamp will cause whole areas of the heated cilia to collapse, mowed down like grass before the mower's scythe.

Although molten glass may be brought into hundreds of different shapes, nevertheless the methods of blowing are always practically the same. It is the setting together of the separate parts, however, which requires great care and alertness, for when once the parts are wrongly joined they can be corrected only with difficulty or not at all, and it is usually necessary to reconstruct the entire piece from the beginning.

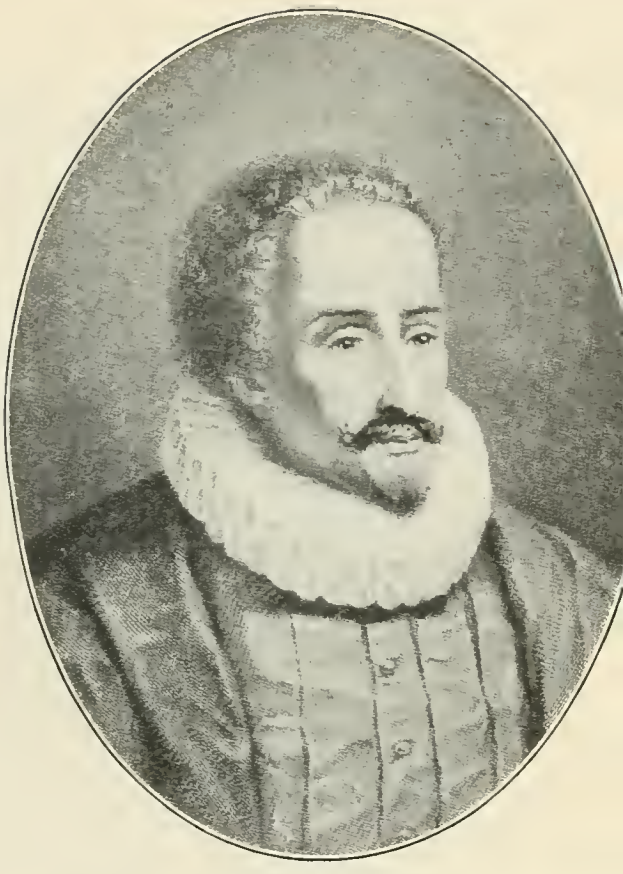
La Casa de Cervantes, in a recent number of La Ilustración Artistica, of Barcelona, Spain, is an account by the Marqués de la Vega Inclán of the restoration of the old house in Valadolid in which dwelt Miguel de Cervantes Saavedra, the immortal author of "Don Quixote." The identity of the house, which is said to have been built by Juan de las Navas some time in the beginning of the seventeenth century, has been fully established for many years, but it was not until the latter part of 1912 that steps were taken, by order of King Alfonso, to prevent the complete ruin and decay of the historic little building and those immediately adjoining. According to the Marqués de la Vega Inclán's account—

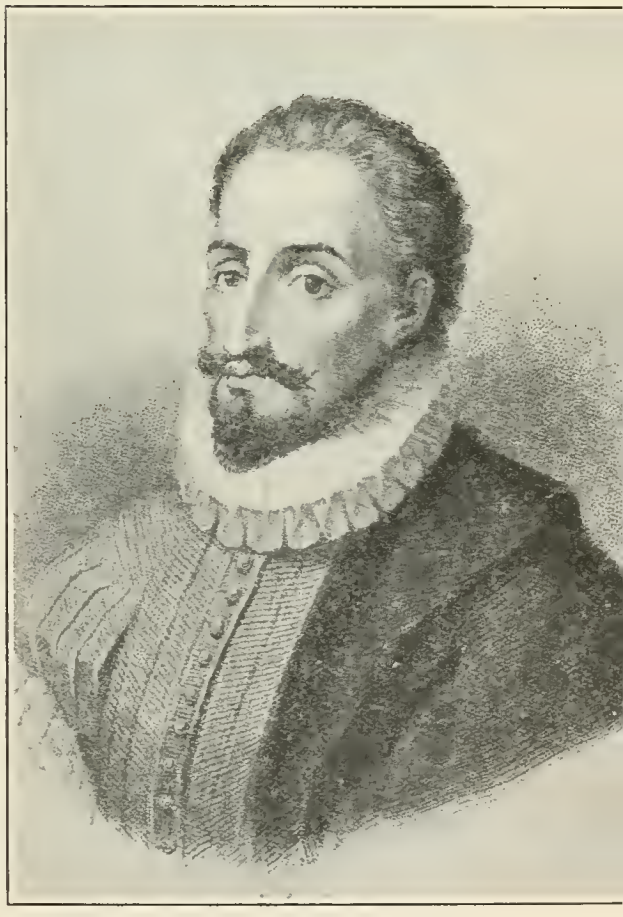
Neither the investigations of illustrious litterateurs and biographers of Cervantes, nor the works of the learned Santamarina, nor the good intentions of the city authorities

Courtesy of Century Magazine.

FAMOUS PORTRAIT OF CERVANTES DISCOVERED A FEW YEARS AGO.

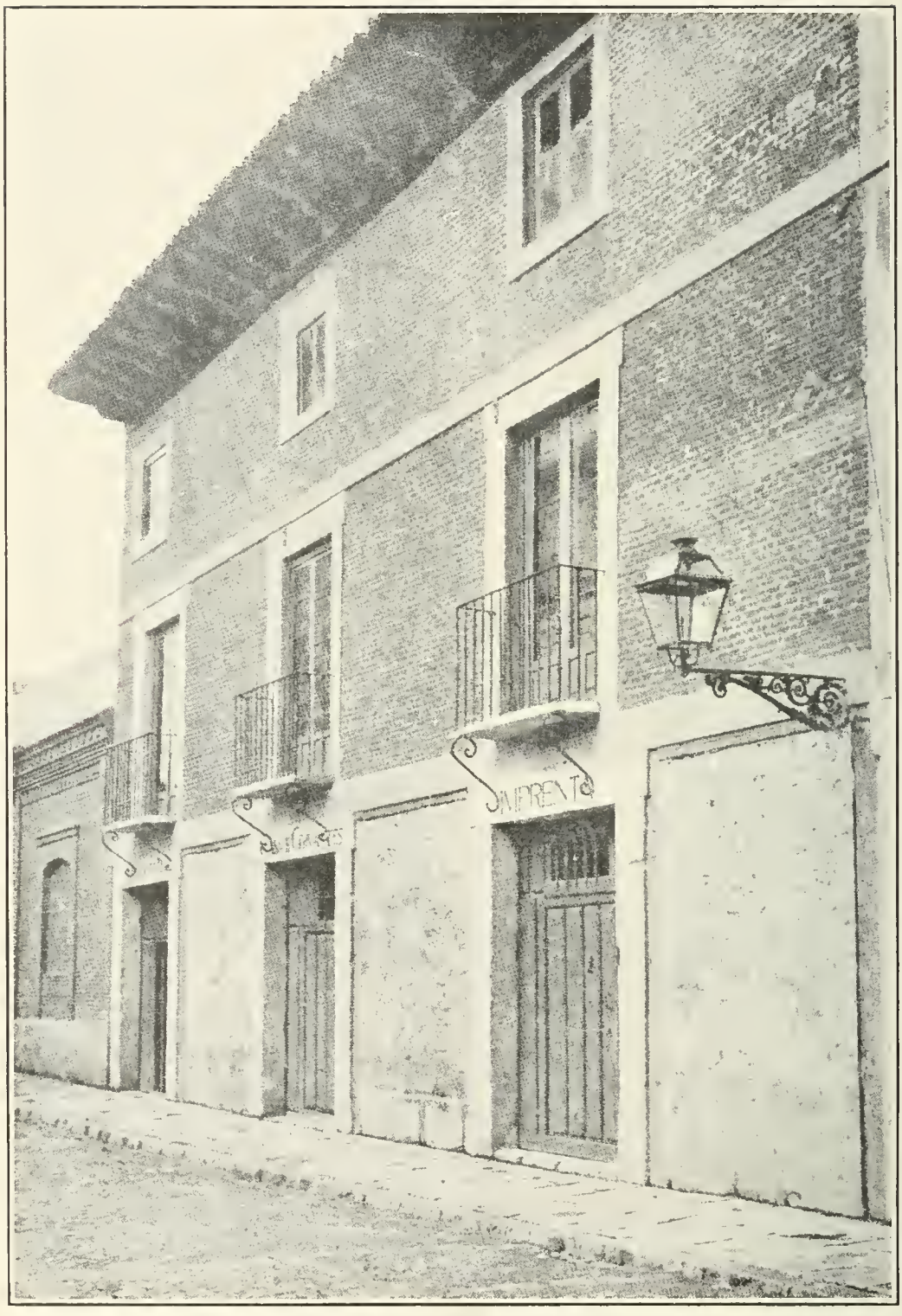
Interesting circumstances surround the finding of this only authentic portrait of Cervantes. A Spanish silversmith in Seville, a collector of old things, had in his shop a painted board which from age and dirt showed only bright parts of a face. On cleaning it he found it to be a portrait of Cervantes, with this inscription on the top: "Don Miguel de Cervantes Saavedra," and at the bottom, "Juan de Jaurigui Pinx, 1600." Cervantes, in his preface of his novels, published in 1613, refers to "my portrait by the famous D. Juan de Jauregui." This portrait has been sought for all over the world for nearly three centuries.





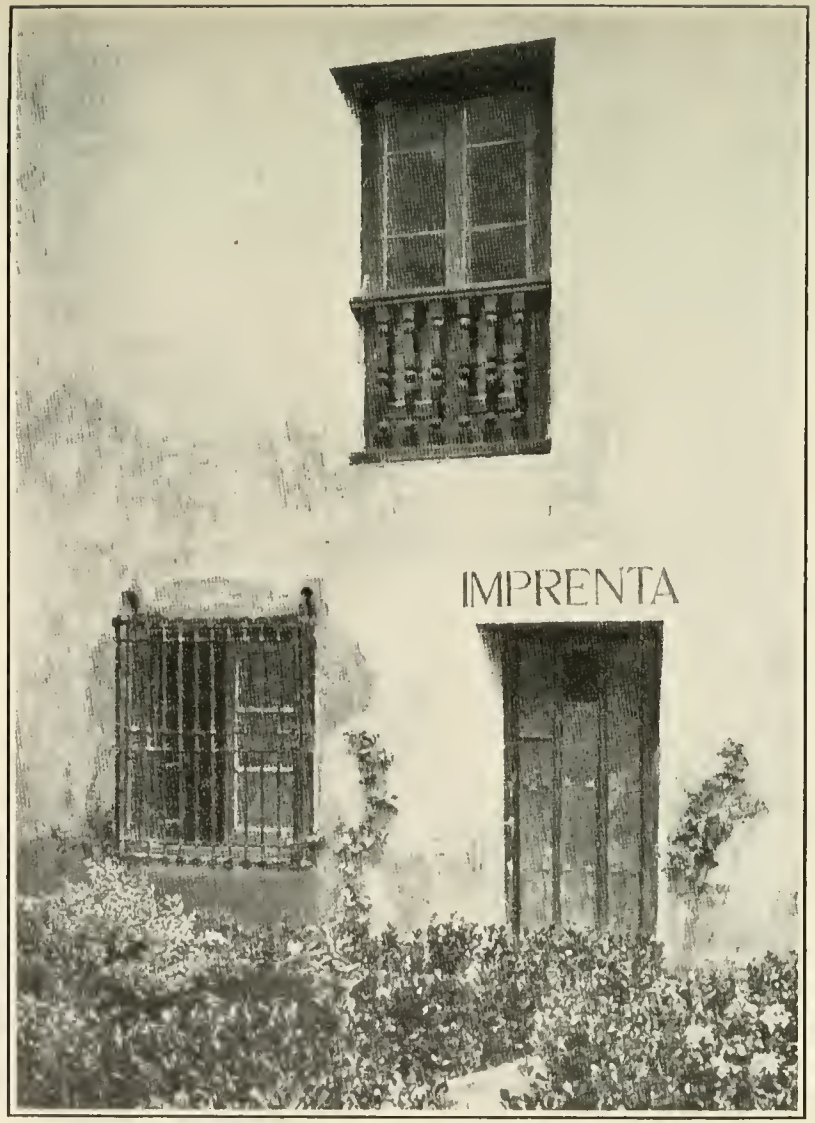
PORTRAITS OF DON MIGUEL DE CERVANTES SAAVEDRA.

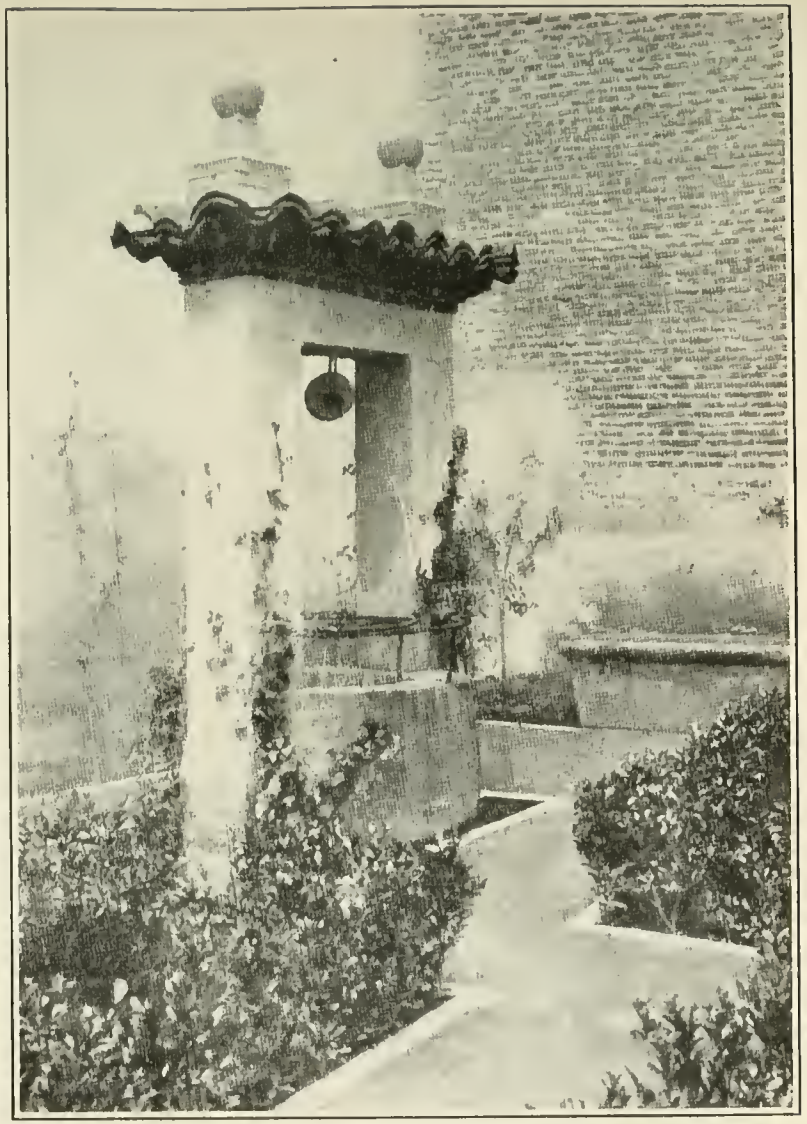
In March and April, 1916, the date set for the Cervantes tricentennial celebrations, learned societies and lovers of Spanis literature will join in paying tribute to the memory of the one who occupies an isolated and unique position among the gre ones of Spanish history. As Columbus stands for the genius of discovery, Cervantes is analogous with Spanish literatur



CERVANTES'S HOME AT VALLADOLID, SPAIN, RESTORED AS A PERMANENT MEMORIAL BY THE KING OF SPAIN.

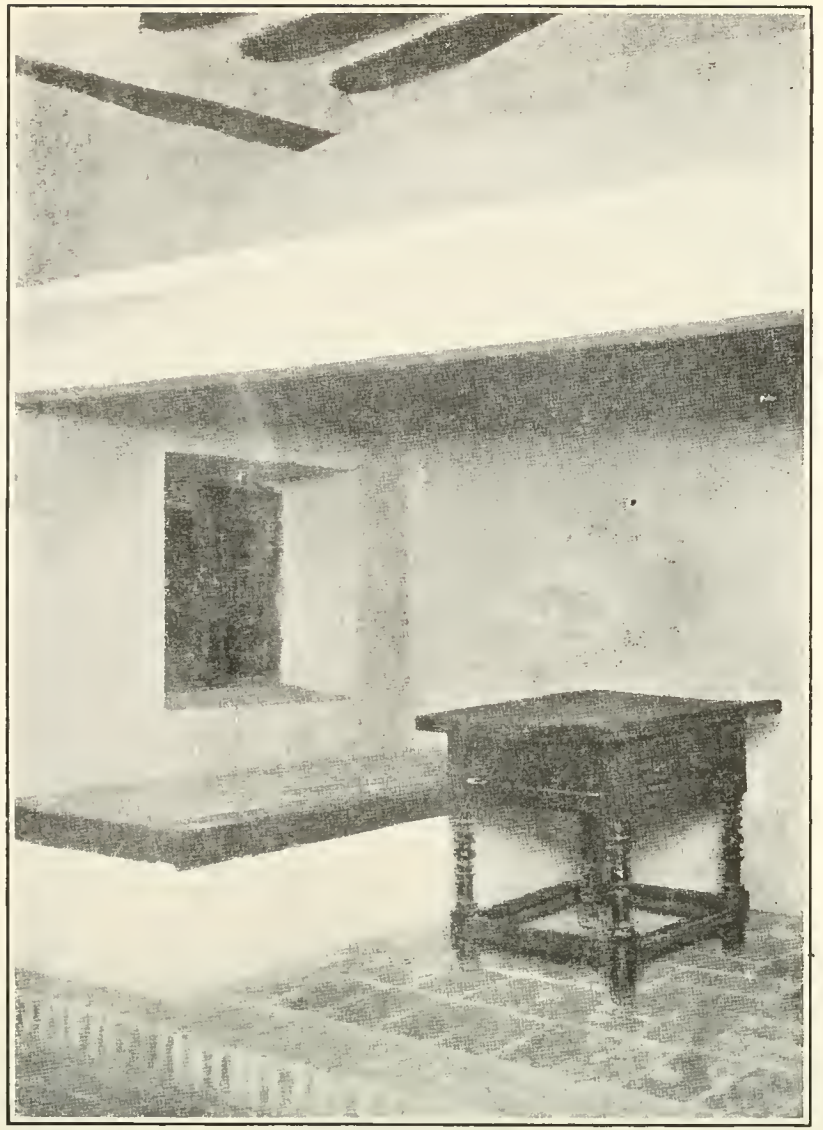
Incident to the tricentennial anniversary of the death of Cervantes, which will be formally celebrated in Spain during the spring of 1916, is the acquisition and restoration of the house in which this writer lived on Rastro Street. A special commission appointed by King Alfonso XIII had charge of the work, which has now been completed. The King recently paid a personal visit to this modest and unpretentious building.

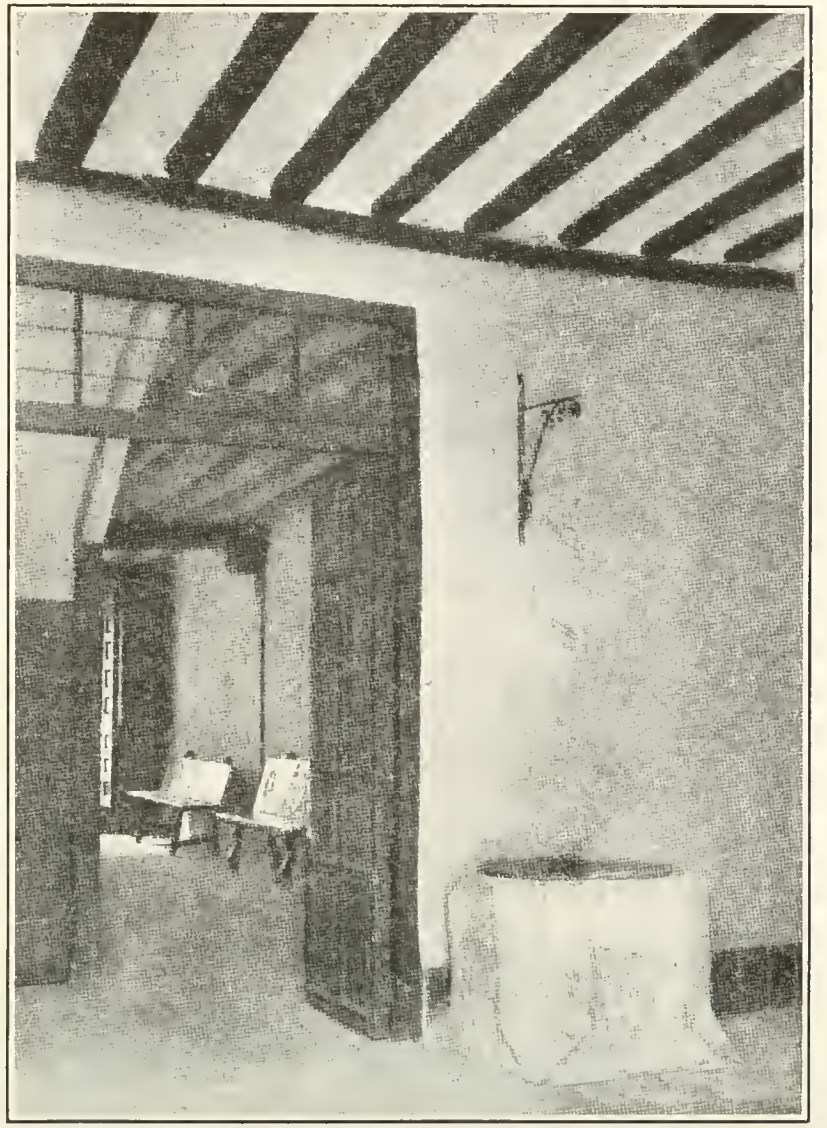




REAR VIEW OF HOUSE FROM WHICH CERVANTIAN PROPAGANDA WILL EMANATE.

Under the King's patronage the royal commission has acquired the house on either side of Cervantes's home as part of the restoration plan. The picture on the left shows one of these extra houses, where there has been installed a complete printing outfit to print the works of Cervantes and to disseminate Cervantian literature. The picture on the right is the patio and well in the home where Cervantes lived.





INTERIOR VIEWS OF CERVANTES'S HOME AT VALLADOLID, SPAIN.

Left view: A corner in the kitchen. Right view: Entrance to lower floor.

of Valadolid (especially of D. Mariano Pérez Mínguez, an enthusiastic promoter of the work now going on), would have prevented these houses going to ruin had it not been for the active efforts of the King and the cooperation of the president of the Hispanic Society of New York (Mr. Archer M. Huntington).

The acquirement of the property by the King, its restoration, and the use to which it will be put is set out by the marqués somewhat as follows:

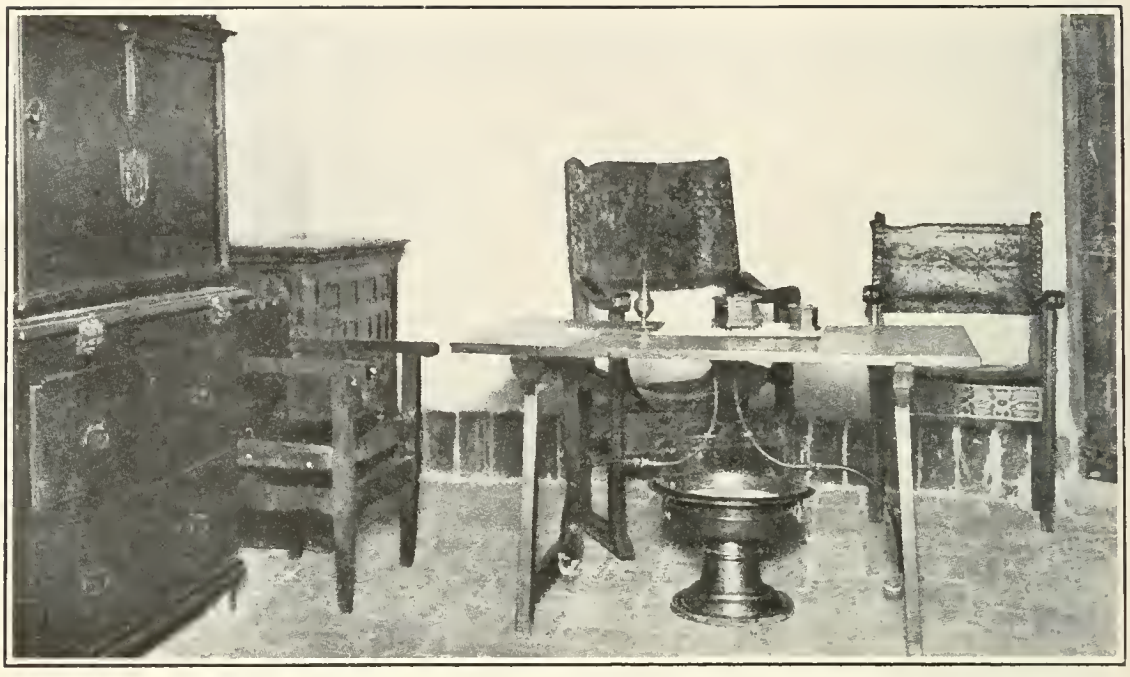
I explained our intentions to the then minister of public instruction, Sr. Alba, and to the mayor of the capital of Castile, Sr. Don Emilio Gómez Diez, requesting from them facilities and information in order that no mistakes might be made in the beginning in handling such a delicate matter as that of acquiring the properties. On October 24, 1912, in the office of the notary, Sr. Huidobro, the deeds were executed, being witnessed by the captain general of the district, the mayor of Valadolid, and the rector of the university, since I desired that the profession of arms as well as that of literature and the civic authority should all be represented in this modest but highly important act.

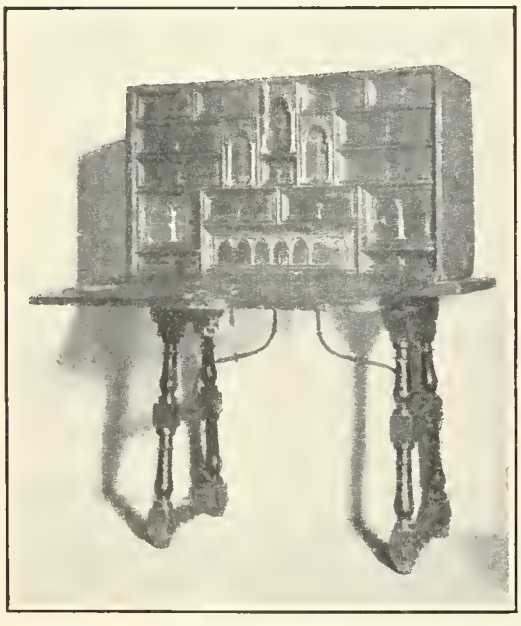
Obedient to the instructions of the King, I acquired in his name and as his property the house that the city authorities of Valadolid, after careful investigation, had by solemn decree of June 23, 1866, designated as the one in which Cervantes had lived. The King desired to have the hónor of being the purchaser, and as the representative of Mr. Huntington I also acquired the two adjacent houses, Nos. 12 and 16, for any future development that the Hispanic-American Society might wish to undertake. An examination of the properties was at once made to ascertain their condition, as no material repairs had been made since their construction by Juan de las Navas.

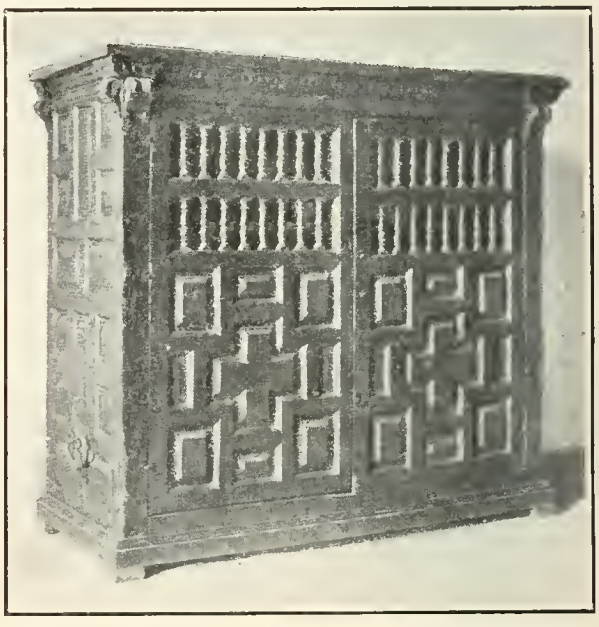
In the restoration of the houses it seems that their former simplicity is to be retained in every respect, except that some parts are to serve such useful purposes as library, reading room, etc. The only material change in the interior construction consists in making one room, large enough to accommodate over a hundred people, of the first floor. Here, according to the marqués, a professor of the university, or some other competent person, will give a reading from the works of Cervantes daily. Another feature is the installation of a small printing office, designed to reprint some of the works of Cervantes and to print matter having to do with a propaganda for the preservation of the purity of the Castilian tongue, etc. In the library will be found some of the oldest and rarest copies of the several works of the famous author whose memory is to be thus perpetuated and cherished. As to the exterior setting the marqués writes:

When the work began the city authorities of Valadolid offered their full cooperation in adjusting the environment of the houses, since they ran the risk of being hidden from view by the modern buildings of a new street. At my request, they agreed that no buildings should be erected on the lots adjacent to our buildings, which permitted me to have a stone wall constructed and to build a broad stairway leading directly to the house of Cervantes from one of the most frequented and modern streets of the city.

On these lots a terrace or balustrade will be erected from which to view the premises, which will be made into a garden absolutely Spanish in character, with such trees as boxwoods and myrtles. * * * As the only work of sculpture, there will be





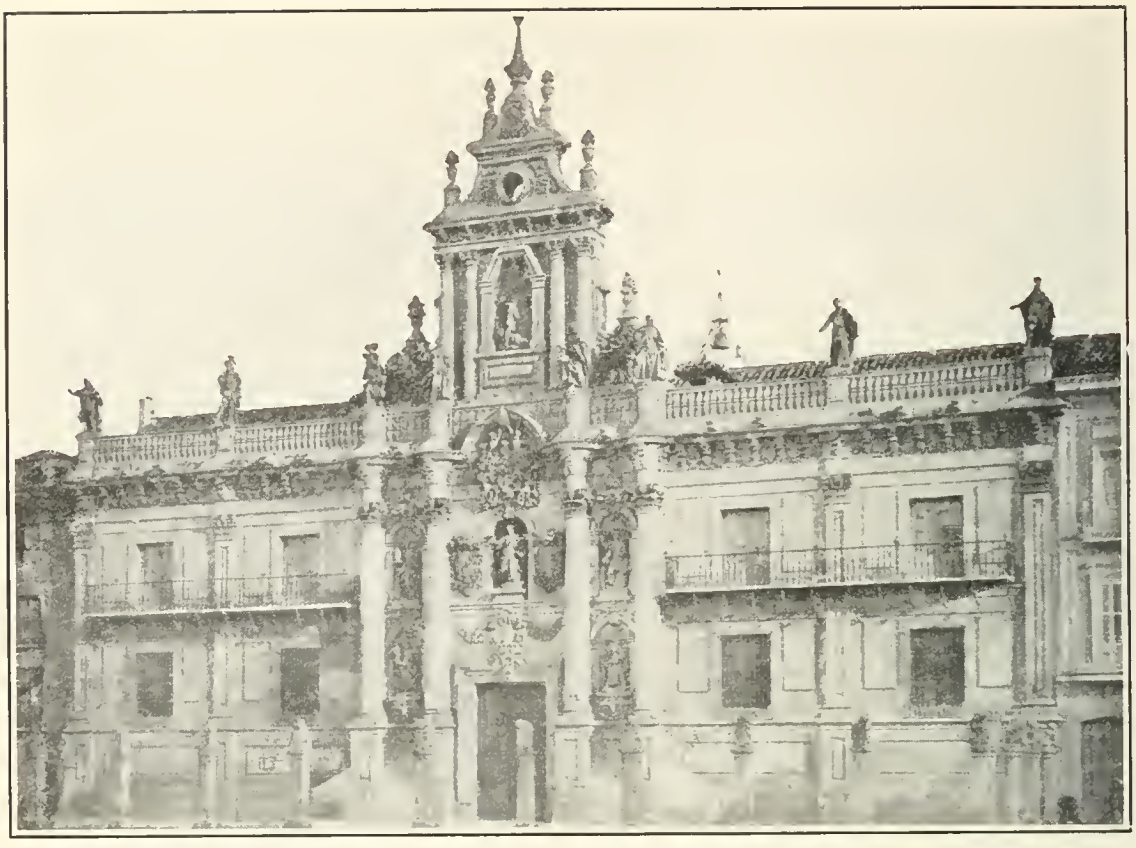


FURNITURE FOR THE CERVANTES HOME.

Top picture: A room in the old house equipped with furniture in the style of Cervantes's time. Lower picture: Desk and bookcase for the restored Cervantes library.

SEÑOR MARQUÉS DE LA VEGA INCLÁN, HEAD OF THE REGAL COMMISSION OF TURISMO, APPOINTED BY KING ALFONSO, TO ACQUIRE AND RESTORE THE CERVANTES HOME.

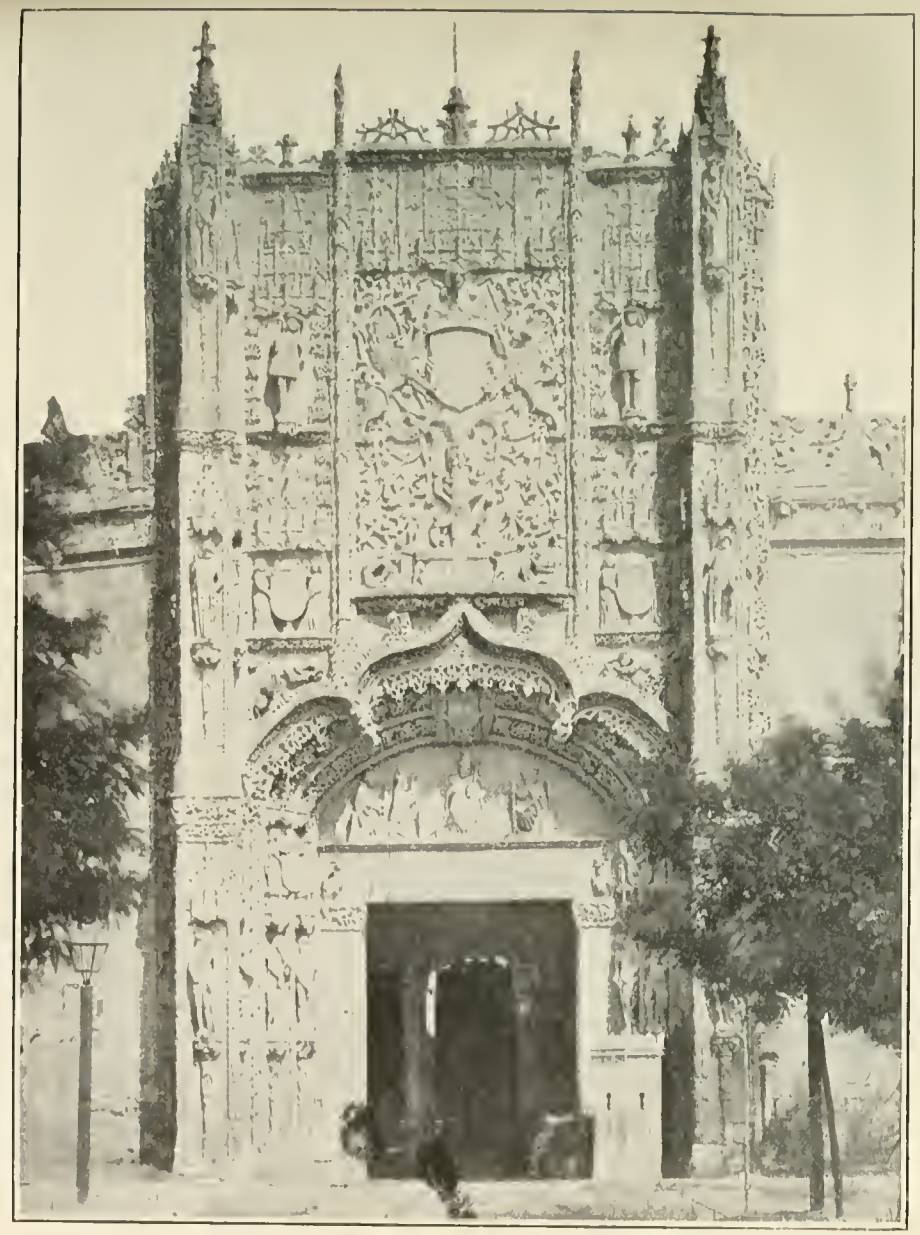
The picture on the right is from an oil painting by Sorolla adorning one of the halls of the Hispanic Society of America in New York City.



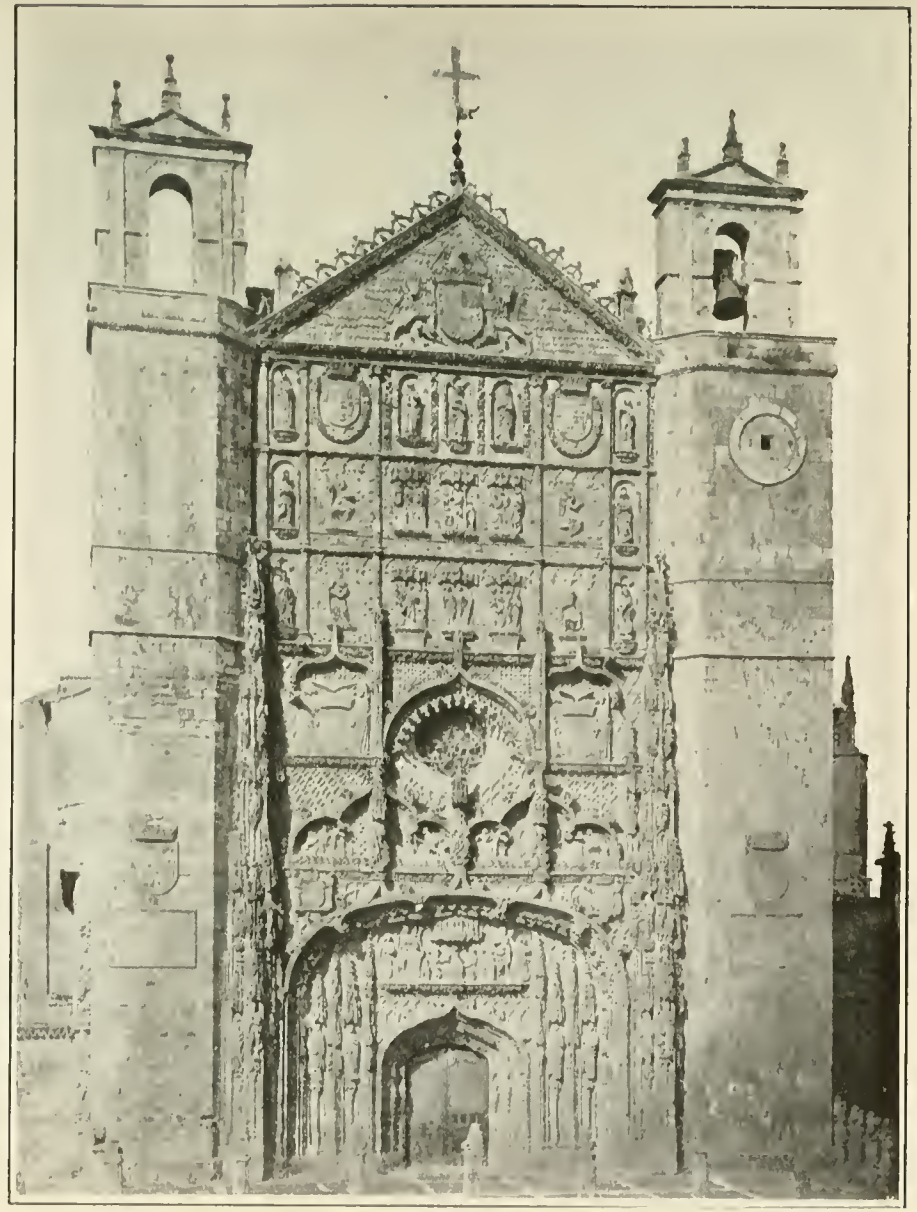
THE UNIVERSITY BUILDING AT VALLADOLID, SPAIN.

THE ROYAL PALACE AT VALLADOLID, SPAIN.

The Cervantes tricentennial celebrations will be inaugurated in Valladolid, where King Alfonso will go in person and give the first of the daily lectures to be held there.



SAN GREGORIO CHURCH AT VALLADOLID, SPAIN.



SAN PABLO CHURCH AT VALLADOLID, SPAIN.

The Royal Commission of Turismo offers great attractions to travelers during the Cervantes celebrations. From Valladolid, under the direction of the Marqués de la Vega Inclán, the participants in the ceremonies will make a tour through Spain, going over an historic route, along various points of which celebrations will be held.

a classical fountain, if possible, relating to that period, symbolizing the gushing forth, as from an inexhaustible spring, of the pure and vivifying currents of the Castilian language, into all the countries that owe their culture to Spain.

For the acquisition of the three houses, as well as for all work of construction on the exterior walls, environment, garden, etc., the King, the president of the Hispanic Society, and an anonymous giver have contributed all the necessary funds to meet the expenses, and the work is now reaching completion.

A Young Brazilian Pianist is the subject of an account in the December number of the Portuguese edition of the BULLETIN of the visit to this country of a young woman whose musical ability has created much favorable comment in New York's social and musical circles. The following is an English version of the sketch:

One of the agreeable incidents of the season enjoyed by New York's music lovers, occurred on November 11, when the brilliant young Brazilian virtuoso, Miss Guiomar Novaes, of São Paulo, gave her first concert at Aeolian Hall. Miss Novaes arrived recently in the United States under the patronage and protection of Dr. José Carlos Rodrigues, editor of the Jornal do Commercio of Rio de Janeiro, and her first appearance before the leading musical critics of New York was a distinct success.

Miss Novaes, who is only a little over 20 years of age, developed her remarkable musical genius at an early age. When only 10 years old she astounded the musical circles of São Paulo by her wonderful performances on the piano at public concerts. After completing her studies under the best local masters she was sent to Europe, at the age of 14, to perfect her art at the Paris Conservatoire. Among 388 contestants for the 12 admissions permitted Miss Novaes won first place. For two years she studied under Prof. Phillip, and at the end of the second year (1912) she received the premier prix du conservatoire.

She was immediately offered engagements to play in Paris, London, Germany, Switzerland, and Italy, and wherever she appeared won fresh honors. By the end of 1913 the hard work incident to her many engagements threatened a breakdown of her health, and she was compelled to return to Brazil for a period of much needed rest. She was to have returned to Europe last winter, having been engaged by concert-director E. L. Robinson, of London, to play at twenty-five concerts in Great Britain, going thence to Holland and to the French Riviera. The European war, however, necessitated the cancellation of these engagements, and when Dr. Rodrigues found it necessary to visit the United States she took advantage of the opportunity to come with him as his protégé.

That her first performance was a pronounced success may be gathered from the following excerpts from reports of the concert

SENHORITA GUIOMAR NOVAES,

the young Brazilian pianist who recently gave her first concert in the United States.

which appeared in some of the leading New York papers. Among other complimentary paragraphs in the New York Sun of November 12 are the following:

Her principal numbers were the Busoni transcription of Bach's Chaconne; Beethoven's D minor sonata, opus 31, No. 2; Schuman's "Carnival"; and the Brahms capriccio in B minor. Chopin and Moszkowski completed the program. The Beethoven and Schuman works are among her best. * * * The Schuman composition without doubt reached complete measure of her musical abilities. It was the work which she played with credit for her entrance examination at the Conservatoire before Gabriel Faure, Claude Debussy, Moszkowski, and other masters.

In this work and also in the sonata Miss Novaes showed a fine and vigorous talent, by no means mature, but possessing without doubt vital elements. Her touch was highly sensitized and had much variety, while her tone was full bodied and revealed a large range of color. Finger work generally accurate and always musical, pedalling guided by feeling for tonal combinations and harmonic modulations, and a keen sense of rhythm were admirable technical features of her playing. * * * Her technic, which is excellent, is backed by the promptings of a genuinely artistic nature, a searching love for melodic line and curve, and a fastidious color sense, which prevents her from overstepping the boundaries of artistic sobriety and from attempting to dazzle or astonish with mere richness of tonal effects. * * * She is now about 20 years of age and ought to become an important virtuoso. At any rate she is a welcome addition to the list of local acquaintances in the music world.

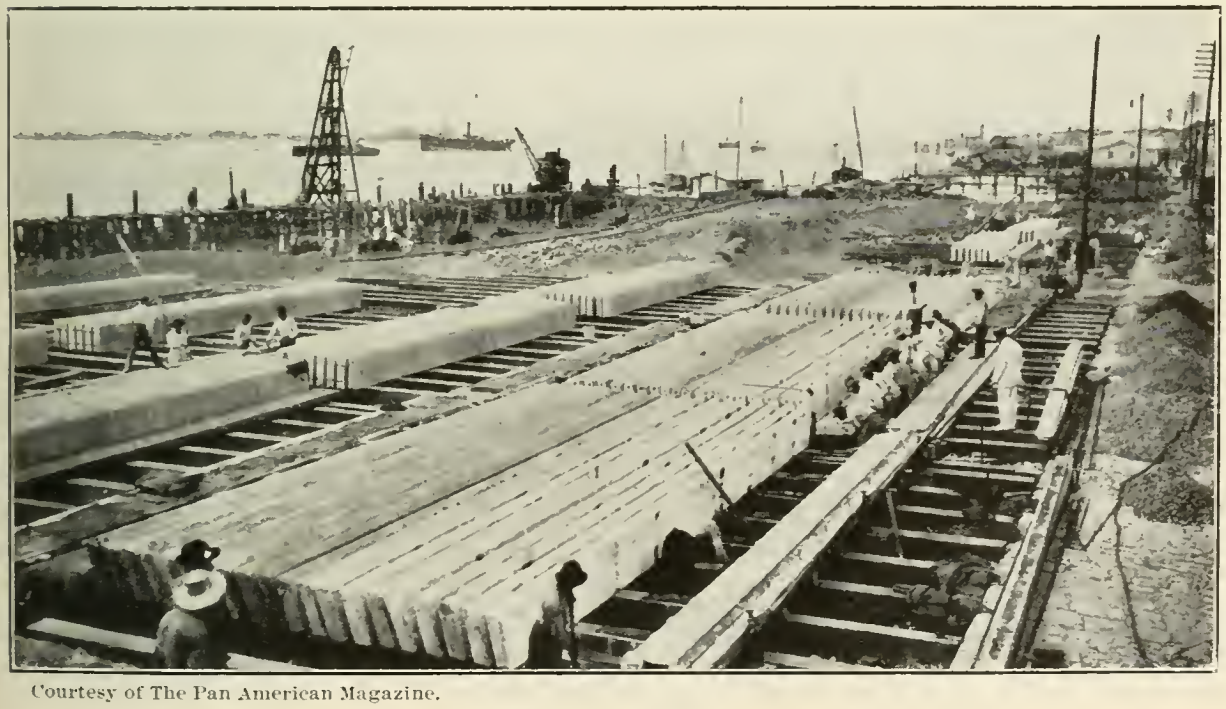
The musical critic of the New York Times writes of her performance:

She is well equipped with the fleet and fluent and generally accurate technique that is expected as a matter of course from public pianists of these days. She has an unusual command of a richly colored tone from the instrument, in all ranges of power; and her tone is full and round, also in all ranges of power, without losing its beauty in the loudest passages. These things hint at a musical feeling; and Miss Novaes showed in her brilliant performance an abundance of such feeling. * * *

Her performance of Beethoven's sonata Op. 31, No. 2, was full of its romantic spirit, of fire and passion not exaggerated for the sake of effects. Her program contained also Schuman's "Carnival," in which she showed poetical fancy, imagination, picturesque detail, and rich tonal coloring; Brahm's B minor Capriccio from his Op. 76 played with the grace insinuating rhythm and intimacy of feeling that it demands but sometimes does not obtain from its interpreters; the Berceuse and trio Preludes by Chopin, and a concert étude by Moszkowski. Miss Novaes gave great and evident pleasure to her listeners, and established herself as one of the better and more interesting of recent additions to the phalanx of pianists.

In addition to her rendition of the classical works of the great masters Miss Novaes will make known to her audiences at some of her recitals some of the works of her own countrymen, such as the compositions of Glauco Velasques, Henrique Osvaldo, and others, to show something of what Brazilians have accomplished in the world of music.

The Sanitation of Guayaquil is the title of an article in the December number of The Pan American Magazine (New York) in which the editor of that publication gives some of the details of the comprehensive plan for making that port healthful by means of modern



Courtesy of The Pan American Magazine.

SCENES IN ECUADOR.

Upper: The river front on the north side, Guayaquil, Ecuador. Lower: Guayas River, looking south, showing reinforced concrete sheet piles for facing new bulkheads.

Courtesy of The Pan American Magazine

SCENES IN ECUADOR.

Upper: The peak of Chimborazo, Province of Chimborazo, Ecuador. Lower: The peak of Cotopaxi, Province de Leon, Ecuador.

sanitation, and the following excerpts therefrom will give an idea of the scope and progress of the work:

Since a dozen years ago, when the sources of tropical scourges became known the world over, the conservation of public health has become a question of national and international importance; it is a problem of sanitation. The stegomia and the anopheles, together with all house flies, fleas, and rats must be exterminated, and with them every condition that breeds such pests must likewise be removed. * * *

On the 5th of January, 1914, Messrs. J. G. White & Co. (Ltd.), of London, signed a contract with the Government of Ecuador for the sanitation of the port of Guayaquil. This contract comprises the construction of the following complete new works.

Water works.—To consist of a supply of potable water equal to 30,000 cubic meters per day, or to a per capita supply of 275 liters per day, the present population being estimated at 80,000. The works will include a complete distribution system in the city, of a total length of 83,000 meters of all sizes of pipes, from 21 inches diameter down to 2½ inches, together with a service reservoir of 30,000 cubic meters capacity; this latter is to be of concrete and will be covered over.

Sewage works.—To consist of a complete system of sanitary sewers having approximately the same lineal length of sewers of all sizes as the water distribution system, including the necessary pumping stations, sedimentation tanks, etc.

Drainage works.—To consist of a complete system of storm water drains covering the whole city and part of the surrounding low-lying lands.

Paving works.—To consist of paving about 50,000 lineal meters of street with different classes of paving, and raising the level of the city in low lying parts by means of earth and rock fill.

River front.—The cleaning up of the river front and the building of a bulkhead wall, also back-filling behind same.

The estimated cost of the above works is upwards of $10,000,000 gold.

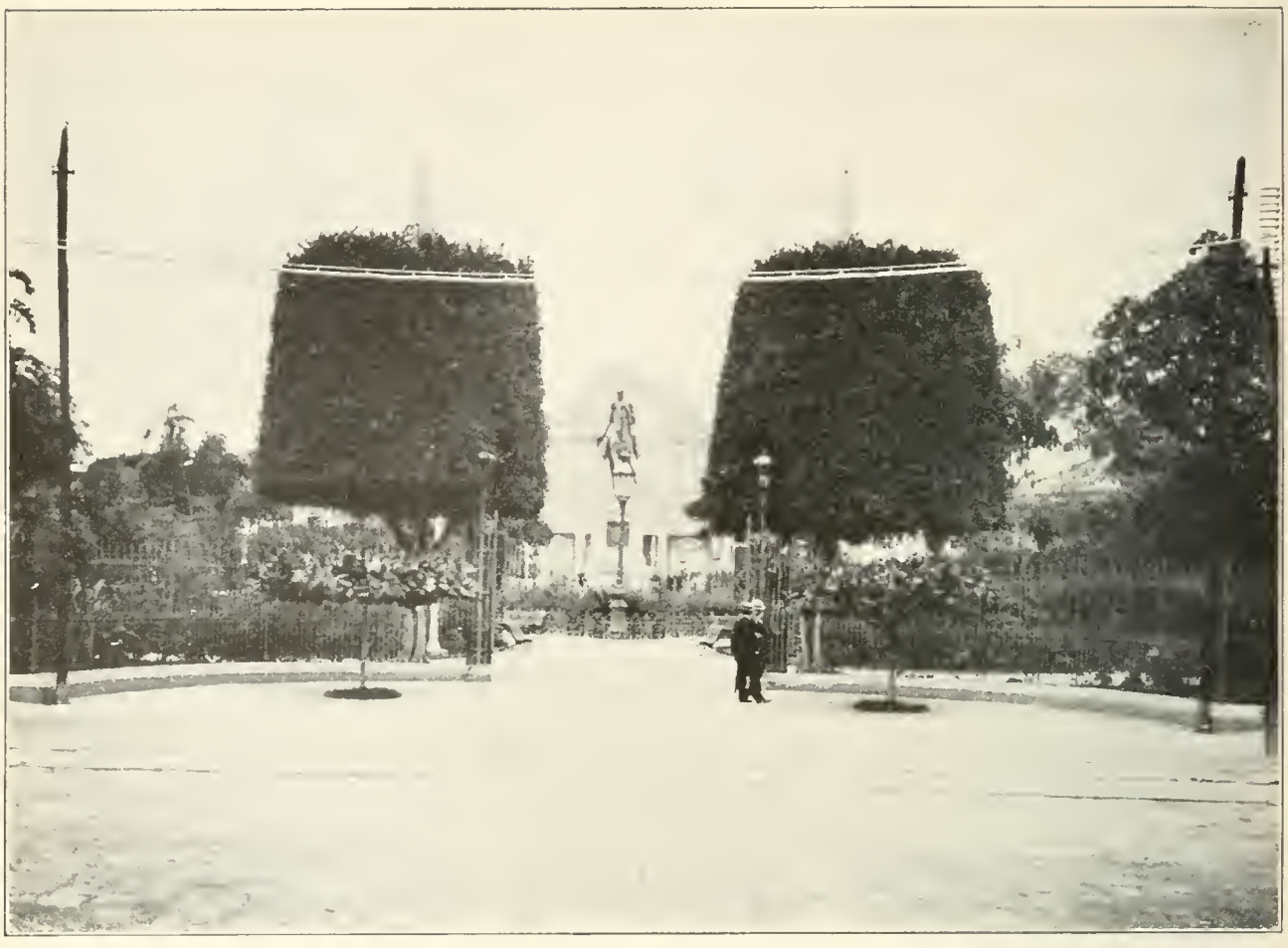
Construction work was actually begun on the 5th of July, 1914, when the contractors commenced installing their construction plant, which is quite extensive in variety and quantity. In spite of the dislocation of traffic over seas caused by the European war, shipments of plant and material arrived steadily during the latter months of 1914, and by the end of the year the works were in operation; the heavy rains of the early months of 1915 hindered progress to a great extent, but before the month of May the works were in full swing.

The first section to be commenced was the distribution system and the service reservoir, and a few months later the river bulkhead wall. Simultaneously with these works the contractors were busy making surveys for the main supply works and the sewage works. As is usual in the newer republics, very little engineering data of any kind was available for the engineers to work upon.

At the present moment the works in the city of Guayaquil, for the distribution system and the service reservoir, are well on the road to completion, the former being 75 per cent finished, and the latter about 50 per cent. It is hoped that early next year both of these sections will be finished, when the contractors will commence on the main supply.

Work on the malecon wall proceeds steadily; the contractors have begun the worst part first and have already done about 120 linear meters of bulkhead filling. Part of the surplus excavated material from the service reservoir is being used to raise the level of some of the low-lying streets in anticipation of the paving work; already some 10,000 square meters of streets have been raised.

Within recent years the general health conditions of the port of Guayaquil have improved a great deal and there has also been a large addition of foreigners, who find conditions much better than represented to them. Messers. White & Co.'s staff of engineers and other chief employees, numbering some 20 foreigners, have been favored



Courtesy of The Pan American Magazine.

SCENES IN ECUADOR.

Upper: Entrance to Bolivar Park, Guayaquil. Lower: San Francisco church and Plaza Rocafuerte, Guayaquil.

with good health, much to the surprise of the pessimist regarding Guayaquil and its reputation for unhealthful conditions. In two or three years' time, when the sanitation works are more advanced, there should come an end of these pessimistic utterances that have done so much in the past to retard the Republic's progress.

As to the future source of the drinking water of the city, the writer states:

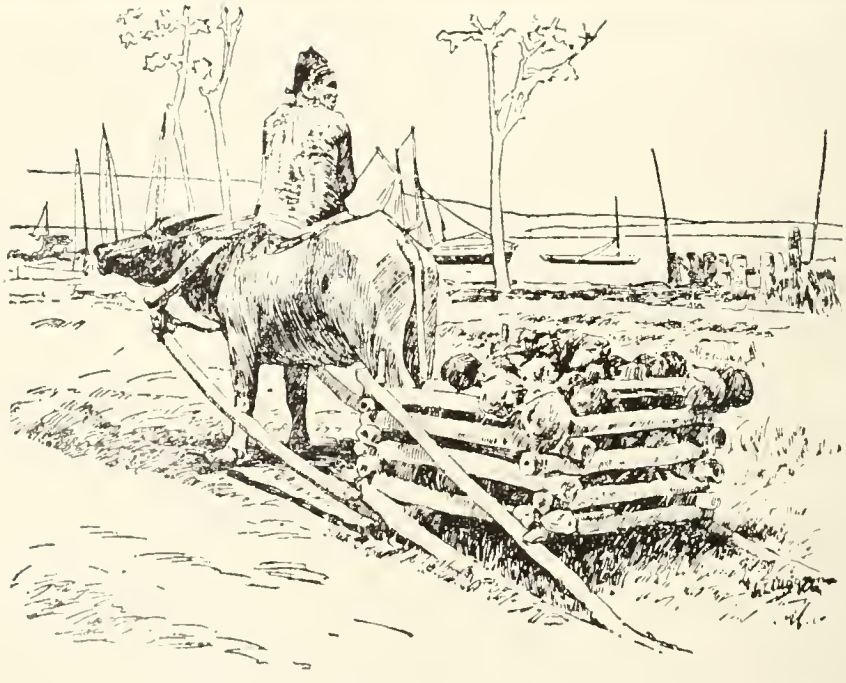
Scarcely more than a hundred miles to the east of Guayaquil, and towering 21,000 feet above sea level, stands the snow-domed Chimborazo, which pours down from its melting snow banks and the ever-condensing clouds that enswirl the ice-bound beacon the purest water that man ever knew. This will be gathered from the mountain streams 60 miles away and piped down to the city reservoirs; or perhaps some of it may be taken from the Rio Daule and thence through some of the big filtering plants.

The Evolution of the Vehicle is the subject of a series of articles appearing in the Spanish edition of the BULLETIN in which the gradual development of wheeled vehicles is traced from the dawn of civilization to the present era of the automobile. The following is the English version of the first installment of the series:

The gradual evolution of man from primitive savagery to his present state of development is an interesting subject of study to many thoughtful minds. Bound up with his moral and intellectual progress is the development of implements, appliances, and mechanical inventions which have from time to time ministered to his necessities, his comforts, and his pleasures. As man's intelligence grew, his wants increased, these in turn furnishing the incentive to develop his ingenuity. The necessities of the Cave man were few, and his own brute strength supplied them, but as the constant exercise of his reasoning powers in his struggle for existence developed his mental faculties he brought to the aid of his physical strength simple mechanical devices which in the course of time gave him the mastery of the world.

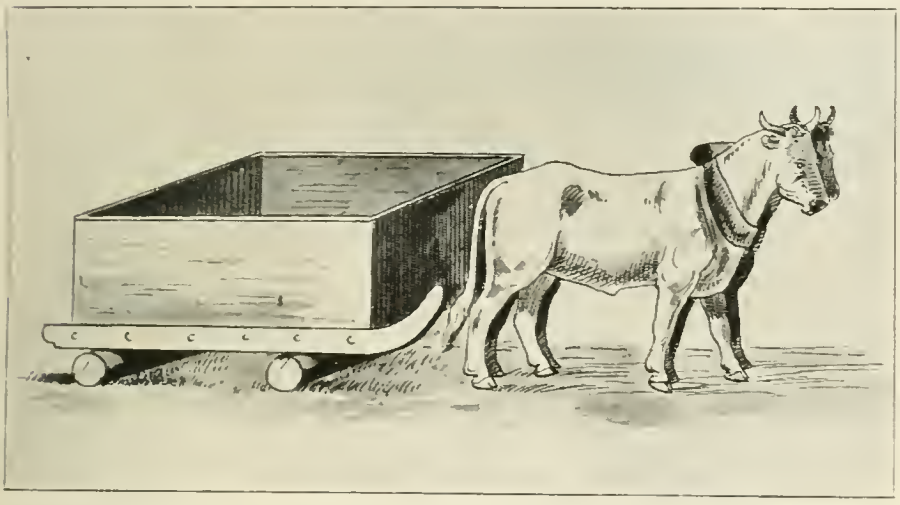
The first advance was doubtless in the line of weapons for defensive and offensive purposes. He found that a club in his hand lengthened his reach and gave added force to a blow. The club was improved upon by the longer, sharpened stick—the spear. Then some inventive genius discovered that a thong tied to the two ends of a slightly flexible stick would create a force that would hurl a small stick to a considerable distance, and the bow and arrow resulted. Again, the discovery of fire and its use in cooking and preserving food was a tremendous advance and doubtless added to his store of supplies, at that time consisting largely of the skins of animals he had slain and which served as the first artificial protection of his body. Thus he began to accumulate things, and when for one reason or another he found himself compelled to move from one cave or tree shelter to another the problem of transporting his few possessions presented itself. He had advanced to the stage when he needed a vehicle.

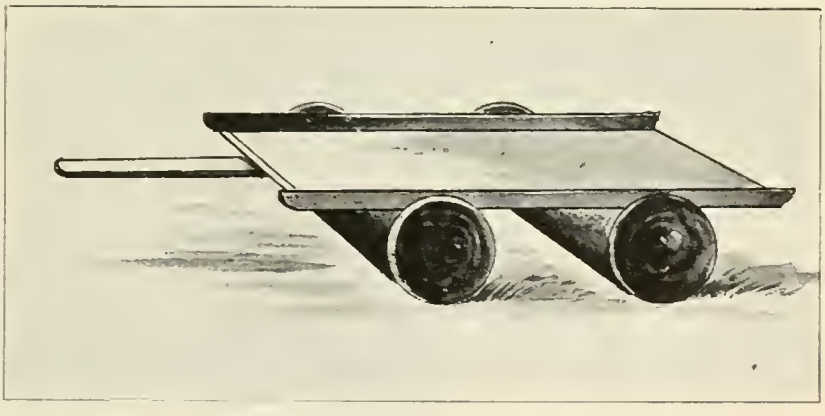
It was no doubt some ingenius hunter who first discovered when he had killed a Cave bear or wild boar that it was easier for him to drag the carcass home on the forked limb of a tree than to carry it on his shoulders, and thus the first primitive sledge came into existence. By tying cross pieces over the forks of the limb he found that the carrying capacity of his vehicle was increased. The next step, doubtless the result of the accidental placing of a round stick under the sledge, was the use of rollers, which made the dragging still easier. Whoever invented a method of fastening these rollers under the sledge so that they would revolve even while attached thereto deserves the grateful plaudits of the world, for the idea of the wheel was then born, and the wheel in its varied applications has been perhaps the greatest factor in all of man's mechanical progress. Upon it and the development of its inherent principles



THE EVOLUTION OF THE VEHICLE.

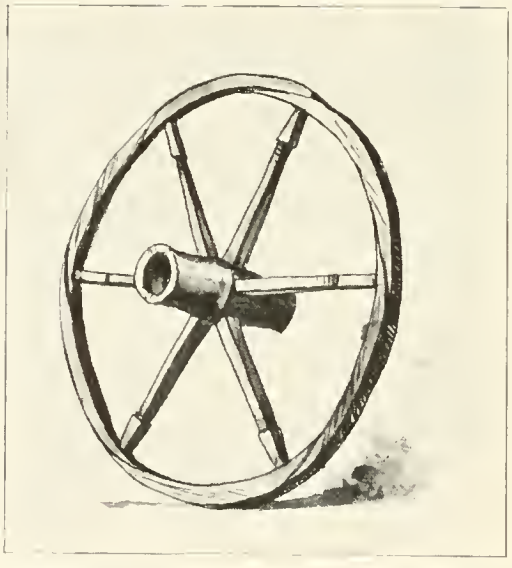
Top: When primitive man found that a floating log would bear his weight, and that by properly using his hands and feet he could propel it, the first system of transportation came into existence. Center: Doubtless the forked limb of a tree formed the first sledge for transporting man's belongings on land. The picture shows such a primitive vehicle occupying a place of honor in the vehicle pageant recently held in South Bend, Ind., U. S. A. Bottom: As man advanced in intelligence he trained the lower animals to draw his sledge, which by that time had evolved into the more complicated vehicle, a box mounted on runners. This form of transportation is still in vogue in some parts of the world, as on the island of Mindanao of the Philippines.





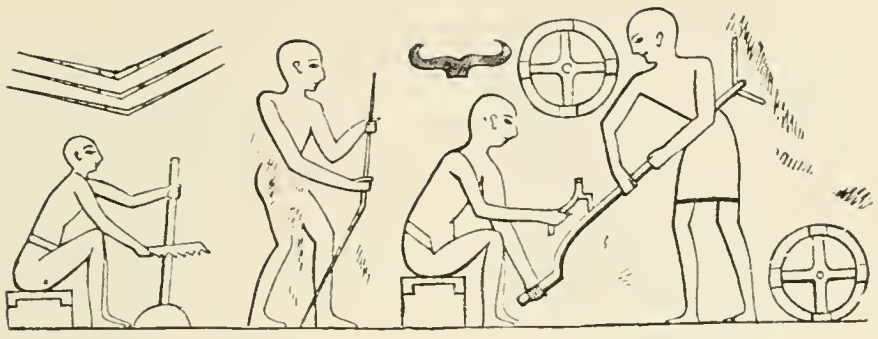
THE EVOLUTION OF THE VEHICLE.

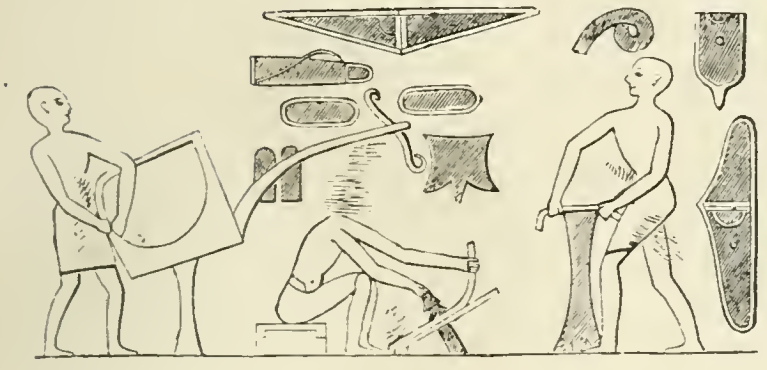
The sledge became more elaborate as civilization progressed, and the most ancient Egyptian sculptures show its use as a funeral car, depicted in the first illustration above. The next step in its evolution is shown in the second picture, the sledge mounted on rollers; while in the third illustration the rollers have advanced to the stage of the solid wheels and axle in crude form. The bottom illustration shows an elaborate Egyptian sledge mounted on fixed wheels and axles.

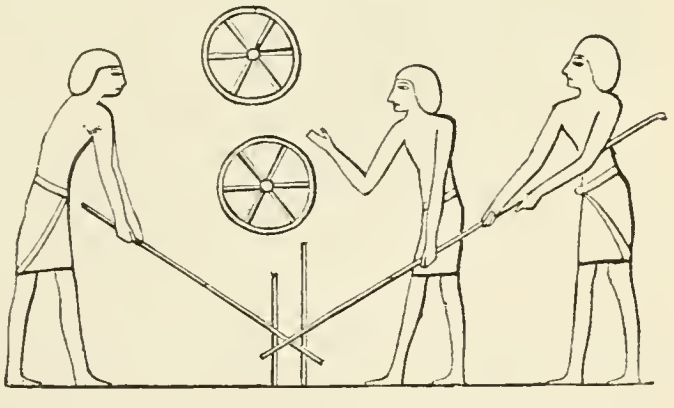


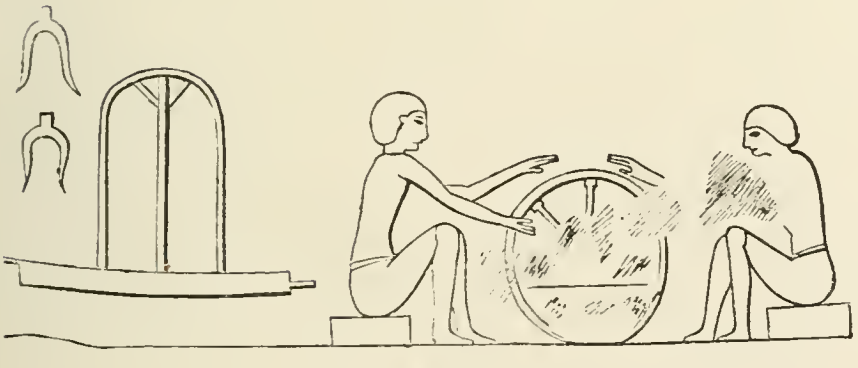
THE EVOLUTION OF THE VEHICLE.

The roller gradually evolved into the wheel, the most primitive form of which is made from the trunk of a tree cut to the required width and perforated in the center for the insertion of the axle. In some parts of Mexico such wheels are still in use, as may be seen from the Mexican carts shown in the top and bottom illustrations. In the center is shown an advanced type of wheel, found in the ruins of Pompeii and now on exhibition in a New York museum.









THE EVOLUTION OF THE VEHICLE.

History gives credit to the Egyptians for the greatest progress in vehicular construction in ancient times and for the invention of the chariot. The above illustrations, taken from ancient sculptures, show the Egyptian artisans making the chariot and its various component parts. The top illustration shows them making the pole and other parts; the second shows the binding or trimming of the chariot body: the third, bending the timber for a war chariot; and the bottom, rimming a wheel.

depend our greatest systems of transportation. Without it there would be no movable engine, no cars, no steam or other power boats, even no aeroplanes.

In the evolution of the vehicle, therefore, we may see reflected man's progress from his elemental state of brutishness to his present development. The various stages of this evolution have been most instructively dealt with by Hon. Charles Arthur Carlisle, of South Bend, Ind., in an address delivered some time ago before the Carriage Builders' National Association of America and subsequently published as an article by The Rider and Driver (New York). The following historical account is taken from Mr. Carlisle's address and the illustrations are from his collection of photographs and drawings.

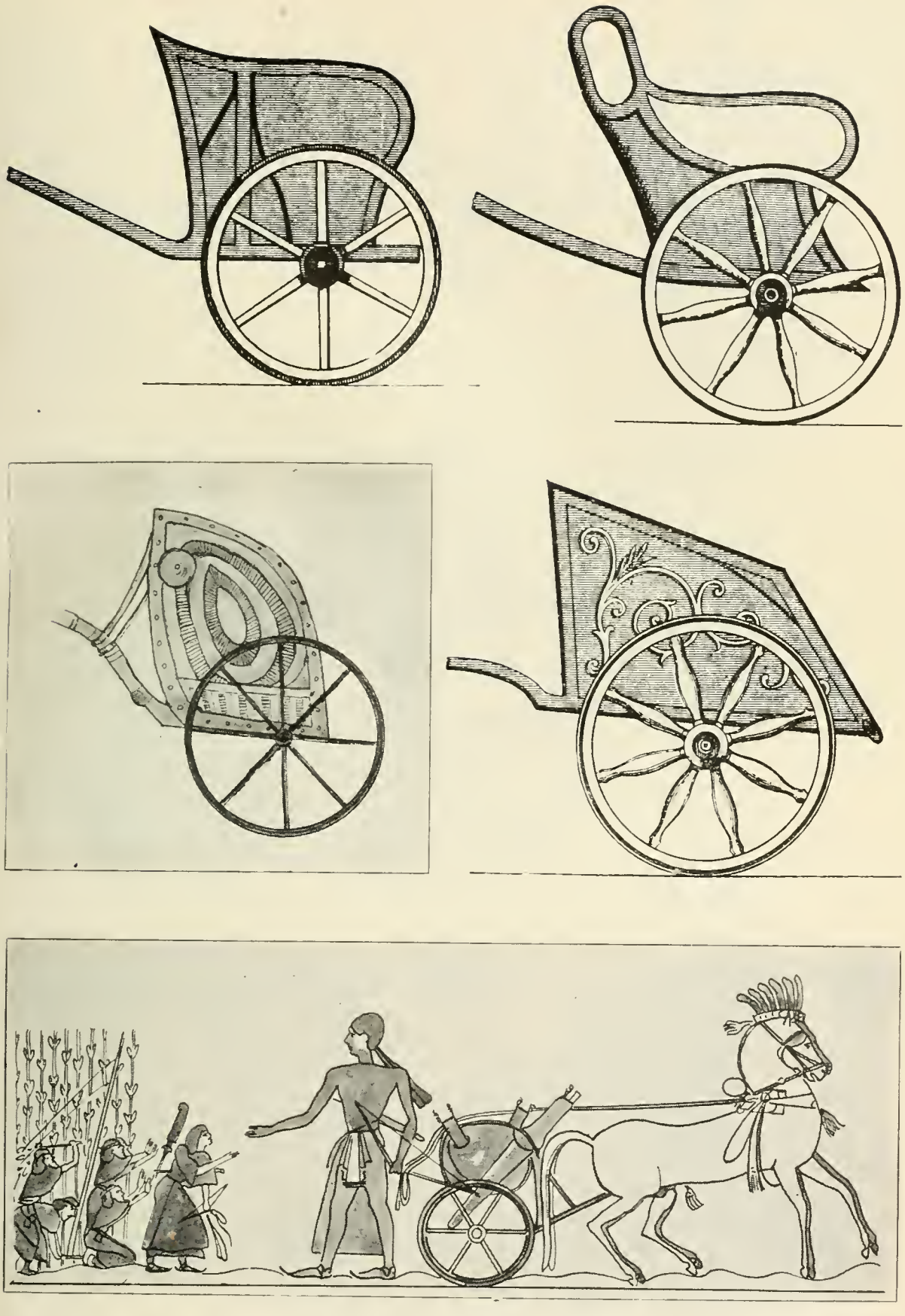
As suggested above, the most primitive vehicle was probably the sledge, provided by nature in the form of a forked limb of a tree. This gradually evolved into the artificially constructed vehicle on runners, the more elaborate forms of which are shown in the ancient Egyptian funeral sledge and the modern sledge still used in the Madeira Islands, man in the meantime having tamed and domesticated various species of animals so that their strength was substituted for his own in drawing these conveyances. The next development was the sledge mounted on rollers, which in turn developed into the vehicle on wheels.

The most primitive form of wheel was the simple roller made from a tree trunk, afterwards differentiated into a pair of fixed wheels by trimming down the middle portion of the cylinder in such a manner as to leave the center of the trunk as a fixed rotating axle. The next step consisted in the substitution of two shorter sections of tree trunks attached to a rotating axle, a form which was probably not improved upon until some one conceived the idea of perforating the cylinders in the center with a round hole and slipping them over the rounded ends of a fixed axle upon which they would rotate. At this stage the wheels were commonly sections of tree trunks or other short and wide cylinders made of wood or in some instances of stone.

The next noteworthy advance is that represented by the carts in use even to-day in some of the remote districts of Mexico. The wheels are larger than can be obtained from a single section of a tree trunk, but are more or less nearly solid, according to the skill of the maker. Each wheel consists of three pieces, attached to each other by means of wooden pins, and are generally manufactured by the use of but three tools—an ax, machete, and burning iron. The main piece is a section of tree trunk 2 or 3 feet in diameter and of a length corresponding to the diameter of the finished wheel, say about 5 feet, hewn down to a thickness of something less than a foot, and penetrated in the center with a rude eye or hole, chopped out with the ax and finished with the machete. The width of this central section of the wheel is then increased to the required diameter by attaching segments, one on either side, by means of wooden pins driven into holes made by the burning iron. These side pieces may be either solid and rounded off to the required curve, or curved pieces hewn from natural crooks. This Mexican cart is practically aboriginal in design, though advanced in the use of metal in its manufacture and also in being designed for use by means of draft animals.

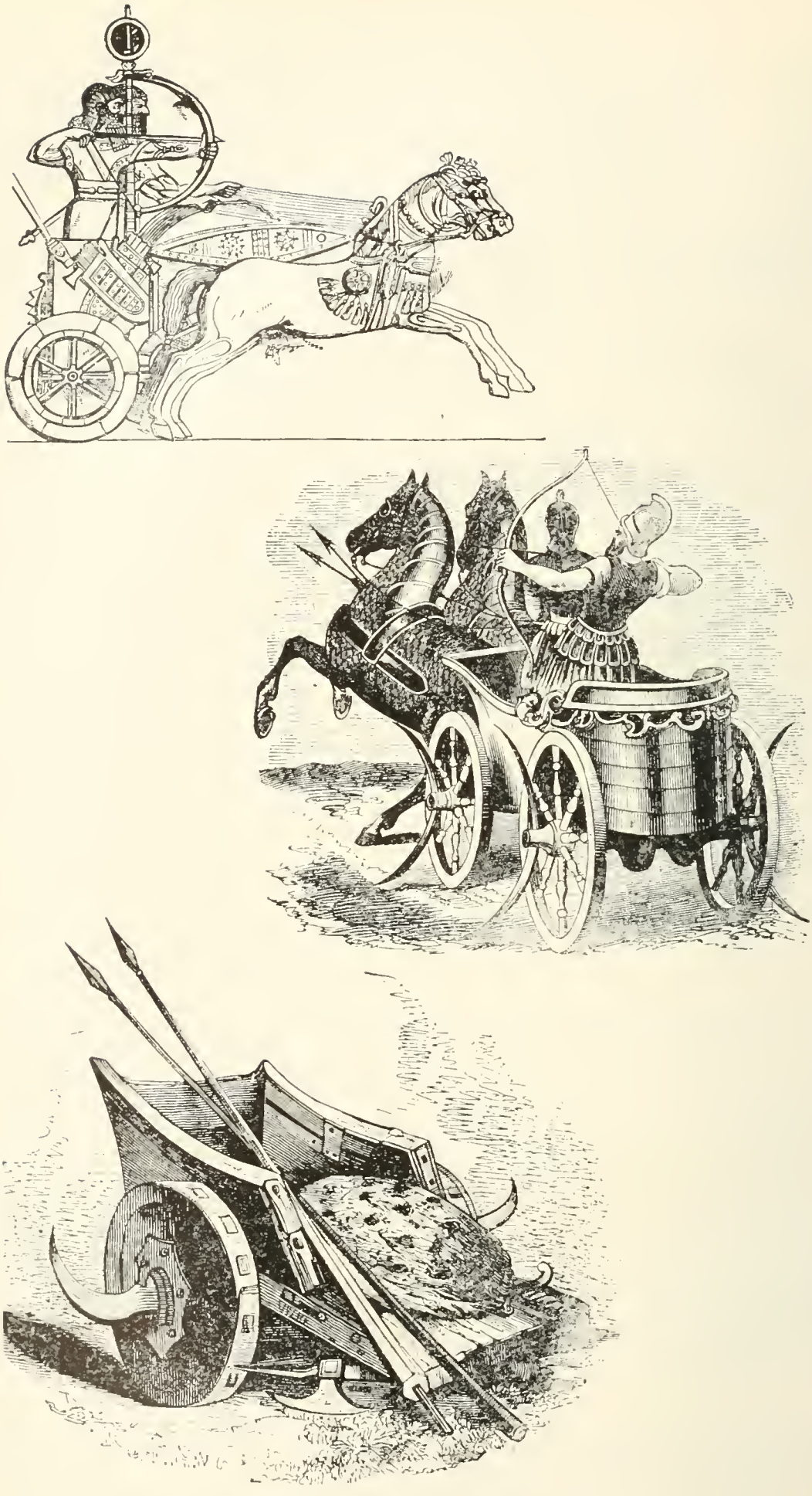
In tracing the development of the wheel it is interesting to note that Aristotle, perhaps the greatest of all Greek philosophers, writing upon the subject in 340 B. C., claimed that the solid wheel and axle revolving together had many advantages over the axle with wheels revolving upon it, thus showing that this important question was agitating the minds of mechanics of that period. The former construction is still in use in modern forms of transportation, such as in many tramways, railways, and in vehicles in use in Spain, Portugal, and parts of South America.

The wheel having been invented, the next great forward step in vehicular construction was the building of the chariot. The Assyrian Empire, although founded prior to the Egyptian, seems not to have produced any marked improvement in the



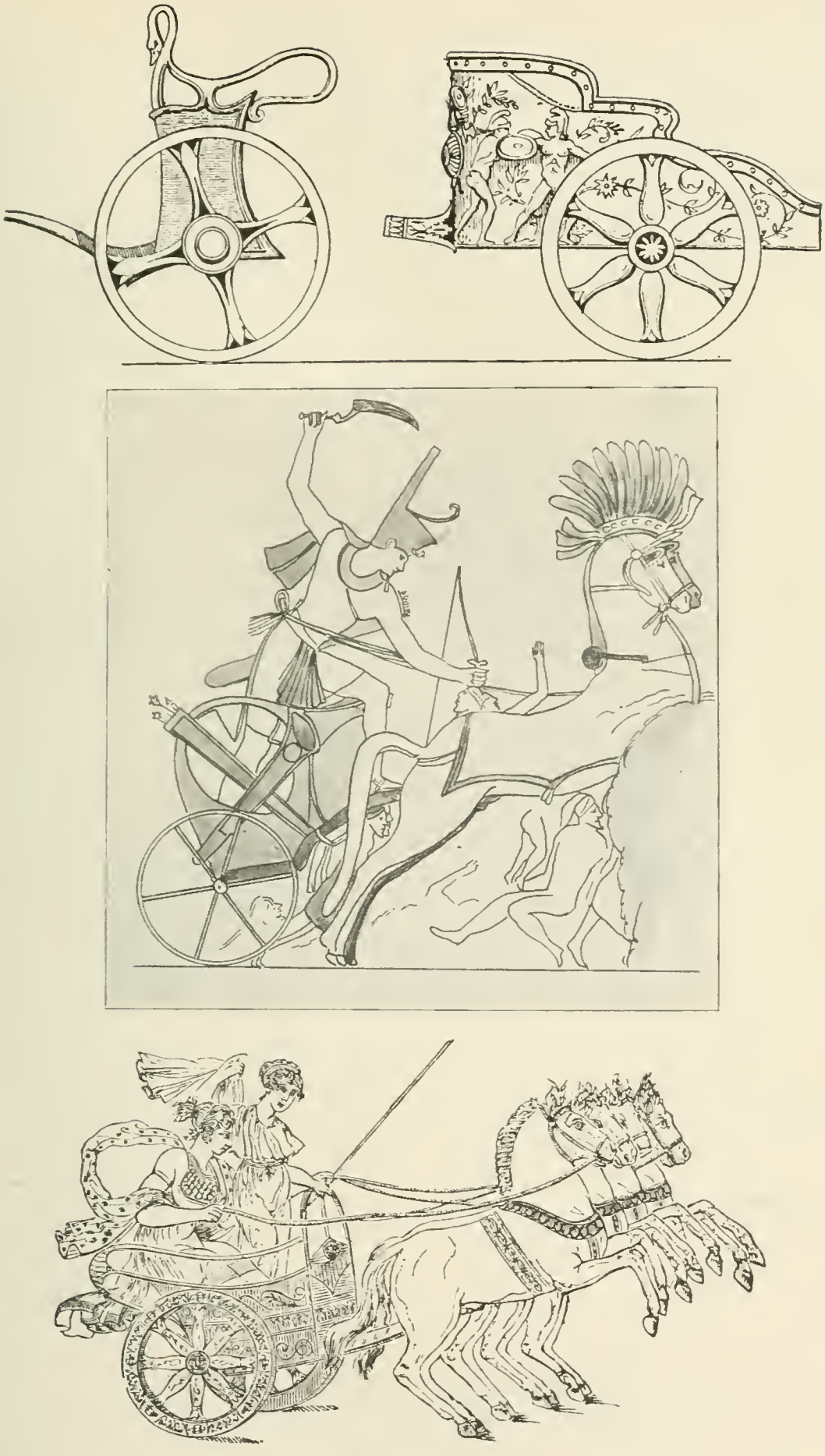
THE EVOLUTION OF THE VEHICLE.

For perhaps 2,000 years the chariot played the chief rôle in the history of the vehicle. From Egypt its use spread all over the known world. In the above illustrations, reading from left to right at the top, are the simpler forms of an Egyptian chariot, an early Grecian. In the center are shown a Hittite chariot and a Roman specimen. The bottom illustration depicts the surrender of his enemies to Mineptah, thirteenth son of Rameses II and his successor as king of Egypt. The Exodus of the Israelites is supposed to have taken place during his reign.



THE CHARIOT IN WAR.

Top: An Assyrian war chariot, of the time of Tiglath Pileser (1100 B. C.). Center: An ancient scythe wagon, a four-wheeled chariot equipped with sharpened scythe blades, an elaboration of the old British covina, found to be in use by the fierce warriors of Britain whom Julius Caesar vanquished in 55 B. C., and specimens of which he brought back with him to Rome, shown in the bottom illustration.



VARIOUS FORMS OF THE ANCIENT CHARIOT.

Top: The light Greek chariot at left and the Roman war chariot at right. Center: An ancient Egyptian sculpture depicting Rameses II in his war chariot taking part in a battle. Bottom: The elaborate quadriga of the Grecian lady, drawn by four horses abreast, and used by the Athenian ladies of wealth and fashion.

art of vehicle manufacture, and history gives credit to the Egyptians for the greater development and for the origin of the chariot, the vehicle which for centuries was identified with all great undertakings and progress. Champollion, the great French Egyptologist, was of the opinion that no people, either ancient or modern, conceived the art of architecture and of mechanical construction on so sublime a scale as the ancient Egyptians, and the chariot was but one of their many gifts to the world. For over 2,000 years it was the leading vehicle of the world, and its varied forms are preserved in Hittite, Assyrian, Babylonian, Grecian, and Roman, as well as in Egyptian sculpture. Many references to it may be found in the Bible, the first perhaps being in the narrative of Genesis where Joseph is raised to the second place in the rule of Egypt, when, it is stated, "they made him to ride in the second chariot which he had," etc.

According to ancient mythology the sun and moon both rode in chariots, the sun having two, one for morning and one for evening use. Medea, the sorceress, who assisted Jason, the leader of the argonautic expedition, in the attempt to obtain the Golden Fleece, is depicted as seated in her chariot, drawn through the air by immense dragons, while Venus, the goddess of love and beauty, is seen riding behind doves and peacocks drawing a beautifully decorated chariot.

Tradition has it that the chariots of Pharaoh were invented by Erichthonius, who first built and rode in one himself to hide his hideous feet, which were believed to be of dragon form. According to the Greek legend he was a son of Hephæstus, who is represented as the god of fire and metallic arts, and was himself a son of Zeus and Hera, subsequently identified by the Romans with their Vulcan, supposed to be the creator of all that was beautiful and mechanically wonderful in Olympus.

Aside from mythology and legend, however, the strength of a nation in ancient days, as now, was largely determined by its munitions of war, and the chariot was a great factor in its equipment. According to the biblical account when Pharaoh and his host were destroyed in the Red Sea he had with him "six hundred chosen chariots." The Phillistines in the time of Saul had 30,000 chariots, while David, in 1055 B. C., took from Ha-da-dizer, King of Zobah, 1,000 chariots, and 700 a little later from the Syrians, who, in order to recover their ground, collected 32,000 chariots. In Egyptian sculpture we find Rameses II depicted in his war chariot, quite an elaborate vehicle for those days, about 1250 years B. C., while Tiglath Pileser, the great Assyrian King, who reigned about 1120 to 1100 B. C., is shown in a similar conveyance in Assyrian sculpture. From these ancient times down to the Christian era the chariot played an important rôle in the drama of man, for its use gradually spread from Egypt to all the other civilized countries of the world. In the meantime other forms of vehicles for purposes of utility had been designed. The chariot, while a necessity in war, was more or less of a luxury in times of peace, and the homely cart was of considerably greater importance to the farmer and the merchant. The development of the transportation vehicle and the carriage will be dealt with in the next installment of this article.

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American policy. The western hemisphere in its relation to the eastern. By John Bigelow. New York, Charles Scribner's Sons, 1914. map. 184 p. 12°.

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El último de los Mohicanos. Por J. Fenimore Cooper. Con notas biográficas por el Dr. Juan G. Wight y notas críticas de la Licda. Elena M. Parkhurst. Boston, D. C. Heath and Compañia, Editores, 1915. front. 704 p. 12°.

The Panama Canal. Comprising its history and construction, and its relation to the navy, international law, and commerce. By Reuben E. Bakenhus, S. R., Harry S. Knapp & Emory R. Johnson, Ph. D., Sc. D. New York, John Wiley & Sons, Inc., 1915. illus. pls. maps. xi, 257 p. 8°. Price, $2.50.

The Panama Canal and international trade competition. By Lincoln Hutchinson. New York, The Macmillan Company, 1915. x, 283 p. 8°. Price, $1.75.

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Proposed Pan-American commerce association. [By] S. R. Robertson. Buenos Aires, Mitchell's English Book-Store 1915. 32 p. 12°.

——— Same. In Spanish. Buenos Aires, Libreria Inglesa Mitchell, 1915. 37 p. 12°.

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Memorial volume of the Transcontinental excursion of 1912 of the American Geographical Society of New York. New York, Published by the Society, 1915. front. illus. maps. diagrs. xi, 407 p. 8°.

For better relations with our Latin American neighbors. A Journey to South America. By Robert Bacon. Washington, Carnegie Endowment for International Peace. Publication No. 7, 1915. viii, 186 p. 4°,

Land magnetic observations, 1911-1913, and report on special researches. By L. A. Bauer and J. A. Fleming. Vol. 2. Researches of the department of terrestrial magnetism. Washington, Carnegie Institution of Washington, 1915. front. illus. pls. v, 278 p. 4°.

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED TO JANUARY 15, 1916.[1]

Title.	Date.	Author.
ARGENTINA.		
Imports of petroleum products during 1914	1915. Nov. 2	John S. Calvert, vice consul, Buenos Aires.
Gypsum or plaster industry in Buenos Aires	Nov. 17	Do.
BRAZIL.		
Opening of bar and completion of port works at Rio Grande	Sept. 17	Maddin Summers, consul, Sao Paulo.
Coal consumption since August, 1914	Nov. 2	A. T. Haeberle, consul, Pernambuco.
Exports of coffee through port of Santos, month of October, 1915	Nov. 5	Charles L. Latham, consul, Santos.
Commerce of port of Santos, first nine months of 1914 and 1915	Nov. 9	Do.
List of merchandise and ship's brokers in Rio de Janeiro	Nov. 26	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
Silk goods in Brazil	Nov. 30	Do.
Refrigeration and refrigerating supplies	Dec. 2	Robert Frazer, jr., consul, Bahia.
Examination required of motorcycle drivers in Rio	Dec. 10	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
Receipts of Rio de Janeiro customshouse	Dec. 14	Do.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

Reports received to January 15, 1916—Continued.

Title.	Date.	Author.
CHILE.		
Laws relating to labeling of merchandise	1915. Oct. 21	L. J. Keena, consul general Valparaiso.
Electric power company. Capacity of plant, current, etc	Nov. 9	David J. D. Myers, consul, Punta Arenas.
Roofing, wall board, etc	Nov. 11	Do.
Petroleum in Magallanes	...do....	Do.
Electrical notes	...do....	L. J. Keena, consul general, Valparaiso.
Chilean commercial delegate to the United States	Nov. 12	Do.
Exports of beans, 1912–1914	...do....	Thomas W. Voetter, consul, Antofagasta.
Motion picture theatres in Iquique	...do....	Do.
Chemicals	Nov. 16	Do.
Nitrate statistics for October, 1915	Nov. 18	Do.
Motor trucks	...do....	Do.
Increase in capacity of nitrate-producing plants	Nov. 19	Do.
Reduction of street railway fares in Valparaiso	...do....	L. J. Keena, consul general, Valparaiso.
Shoe polish	Nov. 27	Thomas W. Voetter, consul, Antofagasta.
Motion picture theatres and dealers in films	...do....	Do.
Clipping from South American Mail on "Romance of nitrate"	Nov. 29	L. J. Keena, consul general, Valparaiso.
COLOMBIA.		
Industrial activities in Colombian petroleum	Nov. 8	Isaac A. Manning, consul, Barranquilla.
Railway survey	...do....	Do.
Temporary regulations of imports into Colombia from belligerant countries.	...do....	Do.
Cattle industry	...do....	Do.
Duties on samples of liquor, etc	Nov. 11	Do.
Banking capital	...do....	Do.
Colombian notes	...do....	Do.
Construction of cart road	...do....	Do.
Packing material	Dec. 7	Leonard Blake Modico, vice consul, Cartagena.
Cream separators	...do....	Do.
Agricultural and road machinery	...do....	Do.
COSTA RICA.		
Annual report on commerce and industries for 1914—Section 3	Oct. 1	C. Donaldson, consul, Port Limon.
Matches, importation and duties	Nov. 5	Do.
Fire apparatus	Nov. 15	Do.
Imports of cotton and silk fabrics	Dec. 15	Do.
CUBA.		
Road improvement	Dec. 9	P. Merrill Griffith, consul Santiago de Cuba.
Improved telephone system	Dec. 11	Do.
Dairy machinery	Dec. 22	Do.
Construction work—New warehouse	...do....	Do.
DOMINICAN REPUBLIC.		
Importation of leather and manufactures of, in 1914. Duties	Nov. 10	Juan M. Herrero, vice consul, Santo Domingo.
Increased use of automobiles in northern Santo Domingo	Nov. 24	Frank Anderson Henry, consul, Puerto Plata.
Importation of beans, 1913–14	Nov. 26	Juan M. Herrero, vice consul, Santo Domingo.
Use of fertilizers in northern Santo Domingo	Dec. 2	Frank Anderson Henry, consul, Puerto Plata.
Lumber in the Puerto Plata District	Dec. 11	Do.
ECUADOR.		
Guayaquil market for October	Nov. 8	Frederic W. Goding, consul general, Guayaquil.
Population of Guayaquil	Nov. 16	Do.
Waterworks and sewerage for Cayamba	Nov. 23	Do.
Commercial travelers in Ecuador	Nov. 27	Do.
Puerto Bolivar-Amazon Railway of Ecuador	Nov. 29	Do.
GUATEMALA.		
Treatment of commercial travelers and samples	Nov. 13	Stuart Lupton, consul general, Guatemala City.

Reports received to January 15, 1916—Continued.

Title.	Date.	Author.
HONDURAS.		
	1915.	
Antimony mines in Honduras	Nov. 30	Walter F. Boyle, consul, Puerto Cortes.
Market for lumber on north coast of Honduras	...do....	F. J. Dyer, consul, La Ceiba.
Motor cars in Ceiba	Dec. 6	Do.
The Ceiba tree	Dec. 7	Do.
Superiority of American "machetes"	Dec. 20	Walter F. Boyle, consul, Puerto Cortes.
Dyewoods in Honduras	...do....	Do.
Lands, methods of farming, etc	...do....	Do.
MEXICO.		
Prospect of mining resumption	Oct. 18	Wilbert L. Bonney, consul, San Luis Potosi.
Plan of people to establish their own light and power plant	Oct. 23	W. P. Blocker, consul, Piedras Negras.
New oil decree—Decrees concerning petroleum issued by Constitutional Government.	Nov. 23	Thomas H. Bevan, consul, Tampico.
Duties, import and export—Exemptions therefrom and surtaxes.	Dec. 1	H. G. Bretherton, consul, Aguascalientes.
Import and export duties collected at port of Tampico	Dec. 3	Thomas H. Bevan, consul, Tampico.
Oil shipments for month of November, 1915	Dec. 10	Do.
Economic matters in Sonora and Chihuahua	Dec. 13	Marion Letcher, consul, Chihuahua.
Metal ceilings and metal shingles	...do....	Philip C. Hanna, consul, Monterey.
Construction materials	...do....	Clement S. Edwards, consul, Acapulco.
Rice	Dec. 23	Philip C. Hanna, consul, Monterey.
Mining activities	Dec. 29	Do.
NICARAGUA.		
Treatment of commercial travelers and samples	Nov. 26	Cornelius Ferris, jr., consul, Bluefields.
Cotton and silk goods—List of dealers in general merchandise	Dec. 15	Do.
Number of telephones in use in Leon	Dec. 22	Do.
PANAMA.		
Imports for June–August, 1915—Revenues and taxes	Nov. 1	A. G. Snyder, consul general, Panama.
Cost of coal exceeds canal tolls	Nov. 15	Do.
Increased duties on liquors, tobacco, etc	Nov. 16	Do.
PARAGUAY.		
Statistics of importations and exportations for first six months of 1914-15.	Oct. 31	Samuel Hamilton Wiley, consul, Asuncion.
Paraguay as temporary market for American goods	...do....	Do.
PERU.		
New tax on exportation of sugar, cotton, wool, and hides	Oct. 7	William H. Handley, consul, Callao.
Customs revenues for September	Oct. 26	Do.
Pamphlet on foreign commerce of Peru during 1914	Oct. 28	Do.
New steamship service between New York and West Coast ports	Nov. 11	Do.
Mineral export tax law No. 2187	Nov. 15	Do.
SALVADOR.		
Pianos	Nov. 27	Lynn W. Franklin, vice consul, San Salvador.
Earthquake resistance building done in Salvador	...do....	Do.
Hotel prices in Salvador	Nov. 30	Do.
Commercial travelers and samples	Dec. 14	Do.
Agencies	Dec. 15	Do.
List of commission merchants	...do....	Do.
URUGUAY.		
Corrugated double-faced strawboard, fiber board, pulp board, and solid fiber mill-board boxes.	Oct. 14	Herman L. Spahr, consul, Montevideo.
VENEZUELA.		
Production of tanning extracts	Nov. 10	Homer Brett, consul, La Guaira.
Commercial travelers and commercial travelers' samples	Nov. 13	Do.

ARGENTINE REPUBLIC

On December 16, 1915, the President and other high dignitaries attended the opening in Buenos Aires of a remarkable NEW BUILDING, called the "Pasaje General Güemes," in honor of the illustrious Argentine patriot. A notable feature of the festivities was a lecture on Gen. Güemes, delivered by the eminent writer, Sr. D. Ricardo Rojas. The building is 14 stories high, having an elevation of 250 feet above the street. A restaurant is located on the top floor, a theater in the basement, and the gallery on the ground floor, above which are offices and quarters for the Press Club and other organizations.——The collections through the Buenos Aires CUSTOMHOUSE in 1915 aggregated 91,408,879.01 pesos (peso = $0.4246).——The Argentine Government has offered for COLONIZATION purposes large tracts of agricultural lands along the Buenos Aires Pacific Railway in the Province of Santa Fe. The railway has opened an office to furnish information and plans an excursion for inspecting the lands, to be sold on a 5 to 10 years' credit.——According to data published by the Department of Agriculture, the AREA sown in wheat, flaxseed, oats, barley, and rye for the 1915–16 crop season is estimated at 9,562,100 hectares, against 9,398,100 hectares sown the previous season.——The total amount of INTERNAL REVENUE collected by the Government during the year 1915 amounted to 63,412,912.55 pesos, as compared with 53,028,224.95 pesos collected in 1914.——The Argentine Government has concluded a LOAN of $5,800,000 with the National City Bank for a period of six months at 6 per cent.——A recent report of the UNIVERSITY OF BUENOS AIRES shows an enrollment of 8,032 students for the year 1914 in the various colleges and affiliated schools of the university. The School of Commerce and Administration was organized only at the beginning of the year 1914 and had an enrollment of 927 students. During the scholastic year of 1914, 452 diplomas were issued in the various colleges.——The tariff on WIRELESS MESSAGES between most of the stations in the Argentine Republic and those located in Peru has been reduced from 63 centavos gold to 37 centavos per word.——A ZOOLOGICAL GARDEN containing 10 hectares of parks and woods, with many varieties of animal life, was opened near the city of Cordoba on December 25. More than 8,000 persons attended the inaugural ceremonies of the Exposition of Farm Products being held in Cordoba.——Plans have been completed for the holding of the FIRST ARGENTINE PHARMACEUTICAL CONGRESS in conjunction with the celebration of Argentina's centenary of independence.——Prof. Rodolfo Kraus, director of the bacteriological

institute of the department of hygiene, has recently discovered a serum for the cure of WHOOPING COUGH, both in the initial and advanced stages. Good results have been obtained in more than 250 cases already tried.——The ARBITRATION AGREEMENT under negotiation between the Chambers of Commerce of Argentina and the United States was approved on December 10 by the Chamber of Commerce of Buenos Aires. This agreement stipulates that all commercial disputes are to be submitted to an arbitration board and is to become effective after ratification, within one year from July 1, 1915.——In connection with the HISTORICAL AND BIBLIOGRAPHICAL CONGRESS, which will be held in Buenos Aires in July, 1916, important exhibits will be shown in American documents and historical papers of every description, as well as in American chartography, numismatics, and philately. Special prizes will be awarded, and requests for the entry of exhibits must be submitted by May 31, 1916.

BOLIVIA

J. Blair Schoenfelt, of Sawtelle, Cal., is negotiating with representatives of the Bolivian Government concerning the establishment in eastern Bolivia of an AGRICULTURAL COLONY made up of Dutch, Germans, and North Americans who have sufficient capital to engage in stock raising and agriculture. Under this plan, provided satisfactory arrangements can be made with the Bolivian Government, 1,000 colonists with their families are to be brought into the Republic to form the proposed colony, and the conditions of settlement are to be made so favorable that it is believed they will identify themselves with the country to such an extent that in a short time they will become Bolivian citizens. The project is still in the formative period, but inasmuch as it is the general policy of the Bolivian Government to encourage immigration, it is thought probable than an understanding may be arrived at very soon which will insure the successful founding of the proposed colony.——S. M. Franciscovich, an Argentine PAINTER of international reputation, recently exhibited in La Paz 45 beautiful paintings of Bolivian scenes, representing lake, valley, and river landscapes of the Bolivian plateau region, especially of the Lake Titicaca, Copacabana, and the Desaguadero districts.——The Congress of Bolivia has passed a bill prohibiting, with certain exceptions, WORK ON SUNDAYS in factories, shops, commercial houses, and other establishments situated in the departmental capitals of the Republic. The law does not apply to domestic service or work of a nature that can not easily be interrupted

without loss to individuals or inconvenience to the public. The bill also provides for the closing of saloons on Sundays. Violations of the law are punishable with heavy fines for the first offense and with fines and arrest for further violations.——Messrs. Roca and Pereira, who have large and well-stocked CATTLE RANCHES on the plains of San Borja near Mojos, territory of South Yungas, have arranged to sell a large number of beef cattle to La Paz and other populous centers of the Republic. The Roca ranches have more than 15,000 head of cattle, which it has heretofore been difficult to transport to market because of the lack of roads. Steps have been taken, however, to improve the trails for a distance of about 90 miles leading from these ranches into the main highways, thereby enabling beef and other cattle to be driven to the markets where there is at present a brisk demand for fresh meats at remunerative prices.——The MERCANTILE INSTITUTE of Santiago, Chile, has opened a branch school in La Paz, under the management of Jose Paz Molina, a Bolivian professor educated in Chile. This school gives special attention to the study of modern languages and commercial subjects.——The SAN PEDRO GROTTO, in the Province of Larecaja, is a partly explored cave, one of the rooms of which is 500 meters long, 50 meters wide, and 30 meters high.——The Bolivian Railway has obtained an extension of time until December 31, 1916, for the completion of the VIACHA TO LA PAZ RAILWAY.

BRAZIL

On January 1, in the presence of his cabinet, members of Congress, the supreme court and other dignitaries, the President of the Republic signed the decree promulgating the CIVIL CODE as submitted by Congress.——At a conference held on December 27 between the minister of finance of Brazil and representatives of commercial associations it was decided to send a COMMERCIAL COMMISSION with several additional subcommittees to the United States for the purpose of promoting commercial relations between the two countries. A committee was appointed for naming the proposed commission, which will be composed of practical business men.——An important FRUIT EXPOSITION will be held in Rio de Janeiro from January 30 to February 6, 1916, and each State will be represented by a special section. Foreign as well as domestic fruits will be exhibited for the purpose of promoting cultivation and commerce in fruits, fresh, dry, or in cans, and the establishment of sanitary fruit markets in the principal cities of the country.——The total FOREIGN COMMERCE of Brazil for the first 10 months of the year 1915, not including imports

and exports of foreign specie and bank notes, according to the report of the minister of finance, was 1,282,371 contos paper (conto paper, about $250 United States currency). The exports aggregated 801,144 contos, against 604,730 contos for the same period in 1914. The imports amounted to 481,227 contos, as compared with 504,561 contos for the same period in 1914.——The Brazilian Senate has recently ratified the TREATY signed at Washington, July 24, 1914, providing for amicable settlement by arbitration of any differences that may arise between the two Republics.——Considerable progress has already been made in the plans for the Fifth Brazilian GEOGRAPHICAL CONGRESS, which will be held in Bahia, September 7–16, 1916.——The Government of the State of Sao Paulo has offered valuable PRIZES for the best crops of corn, rice, beans, and potatoes to be raised by any colonist in the years 1916, 1917, and 1918.——A tract of land containing a million hectares and over 400 leagues square was recently bought in the State of Matto Grosso by an ARGENTINE SYNDICATE for the purpose of cattle raising.——The TRI-CENTENARY of the discovery of Cape Frio and the tri-centenary of the founding of the city of Belem, in 1615, were recently celebrated with appropriate ceremonies.——The total receipts of the national TELEGRAPH SERVICE during the month of November, 1915, amounted to 947,589,860 reis, against 723,477,834 reis as compared with the same month in 1914, showing an increase of 224,112,026 reis or 31 per cent.——According to "A Rua" the imposing new CUSTOMHOUSE under construction in Rio de Janeiro will be ready for occupation in February. The building now in service was constructed in 1852.——On December 16, the new and commodious BUILDING of the Pernambuco Commercial Association was inaugurated with impressive ceremonies. The structure is three stories high and in modern equipment and architecture ranks with the best of its kind in Brazil.——Plans and preparations are already under way for the First International AMERICAN AVIATION CONTEST which is to be held in Rio de Janeiro during the year 1916. All American countries that have air craft will be invited to compete.——On January 6, the inspector of customs at Rio de Janeiro issued a list of TARIFF CHANGES in conformity with the Brazilian budget for 1916, which went into effect on January 1, 1916.

CHILE

According to a statement published in the "Revista Comercial" (Commercial Review) of Valparaiso, there are 46 fire insurance companies operating in the Republic of Chile, 26 of which represent

national and 20 foreign capital. The total assets of these 46 companies amounted in 1915 to 746,387,863 pesos currency, of which 457,445,970 pesos represented the capital of foreign companies, and 288,941,893 pesos currency that of Chilean companies. Of the foreign companies 17 were English and 3 German, with capitals, respectively, of 378,181,918 pesos currency and 79,264,052 pesos currency.——The TREATY OF PEACE and amity between the Government of Chile and that of Uruguay, and which the Congress of Chile recently approved, has been ratified by the Uruguayan Congress.——The budget of the WATERWORKS of Valparaiso for 1916 shows receipts of 1,949,602.97 pesos currency. Of this amount 260,602.07 will be spent on the works at Viña del Mar and Cocon.——The House of Deputies has approved the amended bill returned to it by the Senate authorizing the paving board of Santiago to negotiate a loan for the purpose of obtaining funds with which to REPAVE some of the streets of the Federal Capital.——The balance sheet of the 28 banks operating in the Republic of Chile on September 30, 1915, showed a total capital of 165,691,863.98 pesos currency and 3,767,973.85 pesos gold. The deposits of these banks amounted to 219,710,148.29 pesos currency, and the reserve fund to 54,628,929.02 pesos currency and 2,611,617.31 pesos gold. The cash on hand in these banks on the date mentioned aggregated 74,593,506.39 pesos currency and 8,617,822.42 pesos gold.——Congress has authorized the expenditure of $500,000 currency by the President of the Republic for construction work on the Confluencia to Tome and Penco RAILWAY.——The Agronomic Society of Chile, the members of which are graduates of the Agronomic Institute of that country, have organized a FAIR at the Federal Capital for the exhibit of farm products, fresh fruits, and vegetables. The exposition will be open for public inspection at the Quinta Normal in Santiago during the first half of March, 1916.——The Parral WATERWORKS have been completed and that city now has an abundant supply of water for home consumption, street sprinkling, and industrial purposes, as well as for the irrigation of the numerous gardens belonging to the residents of that municipality.——The port charges in 1915 for the LOADING AND UNLOADING OF VESSELS in the harbors of Antofagasta, Arica, Iquique, Valparaiso, and Valdivia are to be continued in force during 1916.——In January, 1916, 20 students attending the AVIATION SCHOOL of Chile completed their third year's course of instruction. The fourth year's course of the school referred to will begin in March next.——The Chilean-German-Holland Association has been authorized to construct and operate a RAILWAY between the Algarrobo mines, Department of Vallenar, and a point near Maitencillo on the Vallenar to Huasco railway. The line is to be 50 kilometers in length and of 1 meter gauge.

COLOMBIA

The annual FAIR, which has just been held at Girardot, Department of Tolima, was a very successful gathering. The exhibits of agricultural and stock products were exceedingly fine, and much interest was displayed therein. The entire region of which Girardot is a commercial center is in a very prosperous condition.——The COFFEE crop which will be gathered this year from the Departments of Antioquia and Caldas is estimated at 300,000 sacks, valued at $6,000,000. The Department of Caldas has coffee trees to the approximate number of 33,250,000. The annual exports of coffee from this Department are, in round numbers, 180,000 sacks.——The Sucre Sugar Co. is installing at the Central Bolivar sugar plantation near Barranquilla some modern SUGAR REFINING MACHINERY purchased in the United States.——The branch statistical office at Popayan estimates the value of live stock in the Department of Cauca at the present time at $10,000,000, most of which is in horned cattle.——Drs. Jose Antonio Cadavid and Salvador Franco have been appointed, respectively, SECRETARIES of the departments of war and treasury.——The BUDGET approved by Congress for 1916 estimates the revenues at $14,794,000 gold and the expenditures at $15,785,579.24.——A late CENSUS OF BARRANQUILLA shows that the municipality has 75 streets, 9,500 houses, and real property valued at $6,000,000.——A recent Executive decree provides that 80 per cent of the revenues paid to the Federal Government on account of concessions for the exploitation of forests, public lands, and mines situated within the National Intendancy of Chico shall be used for the construction of public HIGHWAYS from Atrato to Cupica Bay on the Pacific coast, from Quibdo to Bolivar, from Jaraguay Canyon to Tumbo, from Tucura to Rio Sucio, from Quibdo to Pueblo Rico and Itsmina, and from Novita to Cartagom.——The department of foreign relations has requested the governors of the different States to furnish the consulates of Colombia abroad SAMPLES OF NATIONAL PRODUCTS, such as ores, woods, tobacco, cacao, coffee, vegetable ivory, vanilla, etc., for exhibition and educational purposes.——The city of Manizales has prepared plans and made estimates for installing an ELECTRIC light and power plant, an aqueduct, and an electric tramway in that municipality.——Work was commenced on January 1 last on the construction of a modern building for the use of the COLLEGE OF MEDICINE of Bogota. This edifice is to be one of the most beautiful, convenient, and sanitary school buildings in South America. The President has appointed Dr. Pedro Maria Carreño, former minister of home government, to the National Academy of Jurisprudence.

COSTA RICA

The Governments of Costa Rica and Nicaragua have concluded a convention governing the exchange of UNIVERSITY DIPLOMAS and certificates issued by institutions of learning in the respective countries or recognized as valid by either of the signatory powers. Under this agreement an investigation is to be made of the diplomas in the two countries issued since 1911 with the object of determining their genuineness; provision is also made for the official exchange of information concerning the registration of diplomas while the convention remains in force.——The department of public instruction of the Government of Costa Rica is considering a plan submitted to it by Leon Fernandez Guardia, an eminent Costarican educator and sociologist, for the establishment of special AGRICULTURAL SCHOOLS for the practical and theoretical education of the indigenous races of the Province of Talamanca. The plan comprehends the collection of mythical and historical data concerning these tribes and the compilation into dictionaries of the words composing their dialects. The department of public instruction looks with favor upon the project, and the only thing in the way of its successful realization is the obtainment of sufficient funds for the carrying out of the work planned.——A Russian miner who has recently been prospecting in Costa Rica has discovered and denounced nine veins of AURIFEROUS ORE, situated in the jurisdiction of Cañas, Province of Guanacaste. The miner referred to has interested Costarican capitalists in the exploitation of these deposits, and if further prospecting and assays of the minerals indicate that they can be profitably worked, arrangements will be made to exploit them either by smelting the ores in the country or sorting and shipping the richest of them to foreign smelters for treatment.——The MUNICIPALITY OF SAN JOSE cleans its streets and disposes of its refuse by private contract. Bids were received and an award made for this work for the present year on December 31 last.——Rules and regulations have been issued by the Government of Costa Rica for the guidance of ELECTRICIANS and their assistants, requiring such persons who are not electrical engineers to have a working knowledge of Spanish and sufficient instruction in mathematics and mechanics to enable them to exercise their callings in a safe and practical manner. Provisions are made for the holding of examinations at stated periods, and applicants who fail in same are not admitted to reexamination until after the expiration of one year.——The department of public instruction has recently decided to erect SCHOOL BUILDINGS, under the supervision of the Government, at Largartillal, Castilla de Santo Domingo de Heredia, and at Angeles de Grecia.

CUBA

The Seventh ANNUAL FAIR of the Isle of Pines will be held in Santa Fe from February 8 to 11, 1915, inclusive. Officials of the Cuban Government, fruit and vegetable growers of the Isle of Pines, and representatives of the Cuban experiment station will attend the fair.——According to press reports a company with a capital of $50,000,000 is negotiating with the principal sugar growers of the Republic for the purchase of SUGAR PLANTATIONS and factories valued at millions of dollars. The agents of the company referred to have obtained options on a number of important properties, but up to the middle of January last, according to the best reports obtainable, only one purchase, that of the Jagüeyal plantation, had been completed.——The state department of the Government of Cuba has been informed by the Cuban legation in Buenos Aires that the Argentine Government has made a reduction in the DUTIES ON CUBAN TOBACCO. The Government, through its legation in Buenos Aires, is continuing the negotiations with the hope of still further decreasing the tariff charges on tobacco in Argentina, which duties were made almost prohibitive shortly after the beginning of the European war.——The agricultural experiment station in the Province of Santiago experimented during the past year in the cultivation of imported SWEET POTATOES, obtaining a yield of about 2 pounds to the square meter. The total crop amounted to 252,475 pounds, valued at 1 cent a pound, or $2,525. This station was also successful in the cultivation of Egyptian rice, which was found to be very productive and entirely suited to the climate of the island.——It is estimated that the CUBAN SUGAR PRODUCTION for the year 1915-16 will amount to 21,991,000 sacks. There are 184 sugar centrals in the island, the largest number being in the following Provinces: Matanzas, 31; Cienfuegos, 25; Habana, 20; Cardenas, 19; Sagua, 18; Cabarien, 16; Antilla and Guantanamo, 11 each; Manzanillo, 10; Jucaro and Santiago, 6 each; Gibara, 4; and the remaining Provinces, 7.——In 1915 Cuba exported 121,005,775 CIGARS, as compared with 123,951,118 in 1914, or a decrease in 1915 as compared with the previous year of 2,945,343. Of these cigars Great Britain took 52,004,832; the United States, 38,564,867; Denmark, 4,341,035; Chile, 2,532,555; Argentina, 1,504,843; Holland, 1,338,310; Egypt, 336,045; Uruguay, 317,975, and the remainder to 15 other countries.——The SEABOARD AIR LINE Railway has opened an office in Habana at 110 O'Reilly Street, in charge of a general agent and of a commercial agent.——A recent Executive

order authorizes the expenditure of $15,000 in the repair of the Ruben Palace at Mariel for the use of the NAVAL ACADEMY.——An Executive decree has just been issued providing for the construction of a STEEL BRIDGE over the Casas River at Nueva Gerona, Isle of Pines, and for the building of a new road which will shorten the distance between Nueva Gerona and Santa Barbara by about 7 miles.——The Government of Cuba has authorized the installation of ELECTRIC light and power plants as follows: At Limonar, Province of Matanzas; Arriete, municipality of Rodas; Enerucijada; and in the towns of Varadero, Cardenas, Union de Reyes, and Matanzas.——The Boniato MANGANESE MINE, situated near the town of the same name in the Province of Santiago, was opened to exploitation in January, 1915.

DOMINICAN REPUBLIC

On December 20, 1915, President Juan I. Jimenes promulgated the law enacted by the National Congress on the 18th of that month granting a two years' extension of time to CONCESSIONAIRES OF MINES, counting from the date of the respective concessions, provided the parties in interest advise the department of fomento, within a term not exceeding six months from the publication of the law, that it is their desire to take advantage of its provisions. The law referred to repeals all other laws and rulings contrary to it.——The city council of Moca has negotiated a loan of $5,000 with Mrs. Eugenia Guzman Lara, to be used for the completion of the public MARKET of the city of Moca. The loan bears interest at the rate of 1 per cent per month, interest and principal being payable at the rate of $500 every six months until the debt is liquidated.——On the initiative of the President a bill has been introduced into Congress establishing the following WHARF CHARGES collectible from importers and exporters of merchandise: Ten cents per 100 kilos of freight, gross weight, imported or exported, regardless of whether same passes or does not pass over the wharf. An exception is made of molasses, which will pay 5 cents per 100 kilos, gross weight. For the use of State warehouses, after the expiration of the first five days, a charge of 5 cents per 100 kilos, gross weight, will be made on goods on deposit one month or fraction thereof. The bill authorizes the President to issue rules and regulations governing the enforcement of the law and the collection of the charges.——In the BUDGET for 1916, recently approved by the municipal council of

the city of Santo Domingo, the total of which, in round numbers, is $200,000, the sum appropriated for educational purposes amounts to $58,000. It will be seen, therefore, that the city spends for the support and maintenance of its schools nearly 30 per cent of its total estimated receipts. The city of Santo Domingo, which contains about 20,000 inhabitants and is the capital of the Republic, will receive during the present year an additional sum of $42,000 for educational purposes, making a total educational fund at its disposal of $100,000, or a sum equal to 50 per cent of its total estimated expenditures. It is doubtful if the capital of any other country in the world expends such a large proportion of its revenues for the cause of education.——The President has promulgated a law, recently enacted by Congress, authorizing the establishment in Santiago de los Caballeros, on the 1st of the present month, of a PROFESSIONAL INSTITUTE having four chairs for teaching law, four for medicine, three for mathematics, three for pharmacy, and three for dentistry.——According to press reports Congress has appropriated $100,000 for the construction of two CUSTOM-HOUSES, one in the Federal Capital and one at Puerto Plata.

ECUADOR

The Congress of Ecuador has granted a concession to the UNITED STATES AND ECUADOR STEAMSHIP CO., a corporation organized in the State of Delaware for the establishment of a steamship line to ply between an Atlantic coast port of the United States, preferably Philadelphia, via the Panama Canal, and Guayaquil, with stops at Manta, Bahia de Caraquez, and other Ecuadorian ports, the company agreeing to build steel wharves at the aforesaid Ecuadorian ports. The vessels will fly the Ecuadorian flag, must be registered in the Republic, and at least one-half of the employees must be Ecuadorians. The company agrees to instruct on its vessels six marine guards, appointed by the President for the purpose of learning practical navigation and naval engineering. The line is to be established, within 18 months from the date of signing the contract, with two first-class passenger and freight vessels, which number is to be doubled within two years and increased thereafter in accordance with the requirements of traffic. The vessels will have a displacement capacity up to 10,000 tons, and will engage in a direct and coastwise service, the latter to begin when the company has four vessels in operation. The vessels are to be modern, have wireless installa-

tions, and capable of a speed of 20 miles an hour. Special attention will be given to the transportation of cacao, coffee, vegetable ivory, oranges, pineapples, alligator pears, bananas, and other fruits; the vessels will also have cold-storage accommodations for the shipment of fresh meats, and suitable decks for the transportation of cattle and other live stock. Warehouses will be erected by the company and wireless stations installed at Guayaquil and other points on the coast of Ecuador which will be used for the company's and the Government's service. The company will also erect such lighthouses and buoys as it may deem necessary for safety and convenience, and will maintain in Guayaquil, Manta, Bahia de Caraquez, Port Bolivar, and such other places as it may deem desirable, warehouses, shops, and coaling stations. The company is obligated to transport for the Government for 25 years five families of American or European colonists, second class, gratis, on each trip from the United States to Ecuador, and to carry free for 10 years the machinery imported by colonists for developing and increasing the stock-raising industry of the country, and at half the regular tariff rates for the succeeding 10 years. These conditions also apply to such stock as may be imported by the colonists or small farmers for breeding purposes. The concession exempts the company from Federal and municipal taxes and from lighthouse and port dues during the term of the concession, and exempts from customs duties fuel and materials imported for its own use. The company will give special attention to the development of the stock-raising industry in the Republic and will construct a first-class abattoir to prepare meat for shipment abroad. The sum of 1,000,000 sucres (sucre = $0.4867) is to be invested in the enterprise within the first 18 months.——Sr. Alfredo Baquerizo Moreno, formerly Vice President of the Republic, president of the Senate, and minister of foreign affairs, has been elected PRESIDENT of Ecuador for the term 1916–1920.——During the first half of 1916 the port of Manglaralto exported 57,732 kilos of shelled and 13,940 of unshelled VEGETABLE IVORY NUTS, and 12,526 kilos of toquilla straw.——Congress has enacted a law making October 9 of each year a national holiday in honor of the inauguration of the independence movement at Guayaquil on that day and month in 1820. The law also authorizes the municipality of Guayaquil to hold a NATIONAL EXPOSITION in commemoration of the independence movement, and to establish a park to be called "Plaza del Centenario de Octubre" (Park of the October Centenary). The department of public instruction of the Government of Ecuador has granted a scholarship to Dr. Luis Ortega for the purpose of enabling him to study SOCIAL SCIENCES for two years in New York or Paris.

GUATEMALA

President Manuel Estrada Cabrera has promulgated a decree reserving to the State exclusive ownership in PETROLEUM DEPOSITS and hydrocarbides in general existing in the subsoil of the lands of the Republic. Provision is made for the exploitation of such deposits under leases made by the department of fomento to native or naturalized Guatemalan citizens. These leases must be approved by the Chief Executive, are not to run for a longer period than 10 years, and can only be transferred to third parties with the express consent of the Government.——At the general election held on the 12th of the present month Gen. Manuel Estrada Cabrera was unanimously reelected PRESIDENT of the Republic for another six years, his new term of office expiring on March 31, 1923.——The consul general of Guatemala in New York has contracted with S. S. Jerwan, of New York City, to take charge for a period of one year of the AVIATION department of the National Academy of Guatemala, located in the Federal Capital. The first monoplane constructed in the Republic was completed in December last by Messrs. Montenelli and Latour under the direction of Mr. Jerwan.——The total annual exports of COFFEE from Guatemala amount, in round numbers, to 140,000,000 pounds, 80,000,000 pounds of which go to the United States and 60,000,000 to Europe. In the United States San Francisco is the largest port of entry for this product.——An Executive decree of October 29, 1915, requires the department of fomento to open STOCK REGISTRATION books, keeping the records for the male and female animals in separate registers.——The Government of Guatemala has ratified the contract made between the department of fomento and Novella & Hodgsdon authorizing the latter to construct a branch railway from Pedrera plantation to the main line of the Guatemalan Railway for the use of the CEMENT FACTORY which the concessionaires agree to establish at La Pedrera in the vicinity of the Federal Capital. The roadbed of the branch line will follow the Chinautla highway, which the concessionaires agree to macadamize and keep in good repair along the route of the railway. The concessionaires are also obligated to furnish the Government annually at cost a quantity of stone from their quarries not exceeding 6,000 cubic meters, and such additional quantities at 10 per cent above cost as may be desired for building, paving, and other purposes. The contract is valid for 10 years from the date of the inauguration of the cement factory at La Pedrera.——An Executive decree of December 20, 1915, provides for the holding in the city of Guatemala of a

NATIONAL EXPOSITION of native food products during the Festival of Minerva, which commences on October 29, 1916. Exhibits of coffee, sugar, cereals, legumes, tubers, fruits. and other products will be made.

HAITI

Gen. Annulysse André has been appointed by the President of the Republic SECRETARY OF WAR AND MARINE.——The railway management operating the TRAM AND RAILWAY lines entitled "Compagnie des Chemins de Fer de la Plaine du Cul-de-Sac" has just published a report showing that the total receipts of these enterprises during the first half of 1915 were $212 gold and 157,857 gourdes (gold gourde = $0.9647), distributed as follows: Port au Prince tramways, 24,726 gourdes; Bizoton to Carrefour tramway, 36,835; Cul-de-Sac railway, 44,453; Carrefour to Legoane line, $130 gold and 51,039 gourdes; and miscellaneous receipts, $82 gold and 804 gourdes. During the period referred to these lines carried 1,692,195 kilos of freight, of which 1,347,375 kilos represented imports and 344,820 exports.——The BUDGET for the fiscal year 1915–16, recently sanctioned by Congress and approved by the President of the Republic, fixes the expenditures at $3,999,732 and 3,479,821 gourdes (1 gold gourde = $0.9647).—— Congress has enacted a law authorizing a credit of 3,274,107 gourdes and $262,263 to meet the current expenses of the Government and the SERVICE OF THE PUBLIC DEBT for the first quarter of the fiscal year 1915–16, and authorizing the President to negotiate a loan not to exceed $2,000,000, the proceeds of which are to be used to meet the expenses of the budget for the present fiscal year and such obligations of the previous fiscal year as may be outstanding. The Executive is also authorized to reduce the issue of bank notes of 8,000,000 gourdes paper to 3,000,000 gourdes paper.——The Government has granted Octave Brice the exclusive privilege of manufacturing SOAP in the city of Jéremie for 15 years. The concessionaire agrees to build a factory, equip it with modern machinery, and have it ready for operation within a period of time not exceeding two years. Construction materials and those used in the manufacture of soap may be imported free of duty. At the expiration of 15 years the concessionaire may renew the contract upon payment to the Government of 5 per cent of the profits of the business.——The first steamer of the RAPOREL STEAMSHIP LINE, a company recently organized to ply between the United States and Haitian ports, sailed from Philadelphia in December, 1915. The second steamer of this line cleared from the

same port on January 25 last, and it is understood that a regular fortnightly service will be maintained by this company between Philadelphia and Haitian ports. M. Raphel & Co., owners of the line, have opened a branch house in Port au Prince, under the management of Victor Gentil, vice president of the chamber of commerce of that city.——Press reports state that a NATIONAL SOCIETY OF INTERNATIONAL LAW was recently organized at Port au Prince under the presidency of J. N. Léger.——An ACADEMY OF FINE ARTS was opened in the Federal Capital on January 10, 1915.—— A syndicate of the SUGAR CANE cultivators of Plaine du Cul-de-Sac has been formed with the object of interesting the cane growers of the country in better methods of cultivation and in the development of the sugar-cane industry of the Republic.

HONDURAS

A recent estimate of the cost of completing the construction of the COMAYAGUA HIGHWAY, which is planned to extend from Tegucigalpa to Lake Yojoa, connects with the public roads to Potrerillos and Ulua, and the national railway system of the Atlantic coast region, is a little over the equivalent of $300,000 American gold. This highway, which could probably be easily completed within two years, would be of great commercial advantage to the nation and would open up a large section of territory which has hitherto remained undeveloped principally because of inadequate transportation facilities. Lake Yojoa is situated in the western part of Honduras between the Departments of Comayagua and Santa Barbara and is the largest body of fresh water in the Republic. It has a length of about 25 miles, is 3 to 8 miles broad, and is closely surrounded by the Santa Cruz Mountain range. The surface of the lake is about 2,000 feet above the level of the sea.——A number of prominent capitalists of the city of Jùticalpa, in cooperation with the departmental governor of that Commonwealth, have decided to establish an AGRICULTURAL BANK in that city. While this institution proposes to do a general banking business, it will give special attention to the development of agriculture and stock raising in that vicinity, will lend money at reasonable rates to agriculturists who may be in need of same for use in producing and marketing their products or for developing their plantations.——Gen. Herbert O. Jeffries has petitioned the President of the Republic for permission to equip and operate one or more PACKING AND REFRIGERATING PLANTS in the Departments of Colon, Atlantida, and Cortes.

It is claimed that if this industry is established in this part of Honduras, a great impetus will be given to stock raising, since thousands of heads of cattle annually will be required for the use of these plants. The petitioner also asks for the privilege of leasing 153,000 hectares of land for a term of 18 years to be utilized for stock raising.——The school at Marcala, established by Antonio Contreras, for the manufacture of STRAW HATS, is meeting with great success. Some of the pupils enrolled have shown great skill, and a number of Panama hats of fine quality have been turned out by them.——The daily newspaper published in Tegucigalpa, entitled "El Nuevo Tiempo," has established a GENERAL AGENCY at 101 Rue St. Lazare, Paris, France, where it maintains its paper on file and offers to supply information to Honduran and other Latin American travelers who may visit the Continent.——A BUILDING AND LOAN ASSOCIATION, under the name of "Sociedad Constructora Hondureña," has been organized in Tegucigalpa with a nominal capital of $600,000 silver (silver dollar = $0.4841 United States). The association proposes to erect 100 or more houses in the Federal Capital at the rate of not less than 12 buildings per annum. The society is incorporated for a period of 25 years, with authority to form branch organizations in the principal industrial centers of the Republic.

MEXICO

A ruling of the department of fomento of the Provisional Government requires official communications relating to the PETROLEUM industry to be written in Spanish and the use of the metric system in expressing weights and measures. Signs, notices, and information concerning the management and operation of petroleum companies must also be in Spanish.——The treasury department has issued a circular granting one month's time from January 1, 1916, in which to pay back TAXES ON MINING PROPERTY. Failure to make payment within the term specified will work a forfeiture of title and cause the property to revert to the Government.——In 1915 the exports of CRUDE MINERAL OIL from Tampico, State of Tamaulipas, to United States ports aggregated 10,218,788 barrels, as compared with 11,746,371 barrels in 1914. The Atlantic Refining Co. is reported to have contracted for 1,750,000 barrels of Mexican crude oil to be delivered during the present year by the Mexican Petroleum Co.——Press reports state that the Galveston Fruit & Trading Co. has purchased two STEAMERS to ply exclusively between Tampico and Veracruz.——The first WOMEN'S CONGRESS

ever held in the Republic of Mexico met in Merida, Yucatan, in January, 1916, with 700 delegates in attendance. Papers were read and discussions carried on concerning education, sociologic problems, and the arts and industries suited to the employment of women.——The Government of Mexico has issued a decree, effective on and after January 20, 1916, and until further notice, which exempts importers from the payment of 20 per cent of the duties in Mexican gold, and permits the IMPORTATION OF BOOTS AND SHOES, as well as many articles of clothing and fabrics used in the manufacture of clothing, upon the payment of 25 per cent of the regular tariff duties.——The owners of the PANUCO MINES, near Monclova, State of Coahuila, have repaired the railway leading to their properties, and propose, within a short time, to employ a large force in the extraction and smelting of ores.——The Ward Line has arranged for a FORTNIGHTLY SERVICE between New York and the ports of Tampico, Veracruz, and Progreso, instead of the monthly sailings which have existed for some time.——The State of Yucatan has established a school for teaching theoretical and practical SURVEYING in connection with the land department of that Commonwealth. The school opened with an attendance of about 50 pupils.——The Government of the State of Coahuila has placed 100,000 pesos at the disposal of the board of directors of the SIERRA RAILWAY to be used in the construction of that line from the city of Saltillo to Sierra.——A plan has been prepared and submitted to the governor of Yucatan for the establishment of a SCHOOL OF FINE ARTS in the city of Merida, under the direction of the Mexican artist, José del Pozo.——The PEDAGOGIC CONGRESS of the State of Coahuila began its sessions in the city of Saltillo on January 5 last.

NICARAGUA

The Wawashan SUGAR FACTORY, situated on the river of the same name near Bluefields, is a newly formed corporation composed entirely of Chinese stockholders. The capital of the company is $20,000, divided into 1,000 shares of $20 each. The management employes 30 laborers in the cultivation of sugar cane, and has recently placed orders in the United States for machinery for the installation of a sugar factory. According to newspaper reports one of these orders, amounting to $7,800, was placed in New Orleans. The sugar factory which is being installed will produce 75 sacks of sugar per day, and is to be ready for operation in March next. Persons connected with this enterprise state that they will be able to produce

sugar of a quality equal to if not better than that sold in the markets of the Republic at the present time and at a considerable reduction in price. The company has employed James Reid, an American engineer, as technical manager of the plant. Most of the sugar produced in Nicaragua is consumed in the country. Some, however, is exported to Central America and small quantities to other countries. These exports in 1912 consisted of 356,980 kilos, valued at $25,918; in 1913, 497,217 kilos, worth $31,805; and in 1914 to 709,246 kilos, valued at $47,348.——Press reports state that the Anderson RAILWAY PROPOSAL for building a railroad on the Atlantic coast of the Republic has been accepted by the Government of Nicaragua.——The *Veta Louise,* a 63-ton schooner, cleared from Corn Island in December last with a cargo of 100,000 COCONUTS, consigned to Colon, Panama.——Julio Serrano has been appointed CONSUL at Barcelona, Spain.——The Supreme Court of Nicaragua has chosen Dr. Alfonso Solórzano CHIEF JUSTICE, and Dr. Santos Flores ranking associate justice of that tribunal.——C. Colomer, of Bluefields, has arranged to start a cattle ranch at Bayamena, in the Pispis district, commencing operations with 2,000 head of stock. This gentleman will also exploit the Zeledon sugar estate, the production of which during the present year is estimated at 3,000 sacks. The Federal authorities have been petitioned by the management of this estate to allow the establishment of a distillery thereon so as to distil such of the by-products obtained in the manufacture of sugar as are suitable for that purpose.——According to press reports the authorities in Managua have ruled that the DRUG LAW, in so far as it applies to patent medicines and harmless nostrums, is inoperative on the Atlantic coast. The compounding of drugs and the sale of medicines, pills, or tablets, except in original packages, is, it is understood, prohibited.

PANAMA

According to the Panama press the secretary of foreign relations of that Republic and the consul general of Argentina in Panama signed, on January 11 last, a POSTAL CONVENTION providing, among other things, for the establishment at an early date of a parcel-post service between the two countries.——President Belisario Porras has appointed GOVERNORS of the following Provinces: Bocas del Toro, Cocle, Colon, Chiriqui, Herrera, Los Santos, Panama, and Varaguas.——A recent Executive decree declares that, on and after January 1, 1916, the part of the beach of the ISLAND OF TABOGA which extends to the south of Hatillo Cove and to the

north and west of Alcahueta rock, including the El Morro Islet, shall be considered territory necessary for the uses of navigation and for the construction of dockyards, dry docks, wharves, and other Government works. This limits the beach belonging to the municipality of Taboga to the strip in front of the town.——The rules and regulations for the collection of taxes and licenses on the DISTILLATION, REFINING, AND SALE OF LIQUORS provide for the employment by the treasury department of three inspectors to take general charge of this work in the Provinces of the Republic.——The "Diario of Panama" has just published the conditions of the FLORAL CONTEST which will be held in the city of Panama from the 21st to the 23d of April, 1916, in honor of the third centenary of the death of Cervantes. Three subjects form the basis of the literary contest connected with this celebration, namely, (1) a poem, (2) a composition on Quijote as a bond of union between Spain and Spanish America, and (3) an essay on the influence of Spanish in maintaining the national independence of the Nation. Any person residing in the Republic is entitled to enter the contest, but will not be allowed to submit more than one paper on any one subject. The following prizes will be awarded: For the poem a natural flower and a gold medal for the first prize and a silver medal for the second. The first prize for each of the other subjects will consist of a gold medal and the second prize of a silver medal. The papers prepared in Spanish must be submitted before March 20, 1916.——Unofficial advices state that the PETROLEUM Products Co., of the United States, will engage on a large scale in the sale of its products in the Latin American countries, and with this end in view will establish agencies in a number of the Republics and will erect storage tanks and warehouses on the Isthmus and at other distributing centers. The company proposes to invest $1,000,000 in Panama and Colon and $4,000,000 in other Latin American countries.—— The LEASE of a portion of the beach on the island of Taboga which the Government made with Pinel Bros., has been extended for five years.——A decree of December 28, 1915, treats of the duties of PHYSICIANS and regulates the practice of their profession.

PARAGUAY

The Congress of Paraguay has enacted a law authorizing the city of Asuncion to issue PAVING BONDS to the amount of 1,000,000 gold pesos (gold peso = $0.9648), the proceeds of which are to be used in paving the streets of the Federal Capital. These bonds will bear

interest, not exceeding 10 per cent per annum, and an accumulative amortization fund of 2 per cent per annum is provided for their payment, which fund, if deemed expedient, may be increased by the municipal authorities. The ultimate cost of paving the streets will be apportioned and collected from the property owners benefited, and special taxes will be levied for this purpose at so much a lineal meter. Different kinds of paving materials may be utilized at the option of the municipal authorities. If granite is used the duration of the pavement is estimated at 30 years, if asphalt 15 years, and if wooden blocks 12 years. The President of the Republic is authorized to issue rules and regulations governing the placing of the bonds, the work of construction, and all details relating thereto.——According to the Statistical Annual (Anuario Estadistico) of Paraguay, just published in Asuncion, during the 10 years from 1905 to 1914, inclusive, the BIRTHS registered in the Republic numbered 161,852, of which 83,873 were males and 77,979 were females, or a proportion of 51.9 per cent males and 48.1 per cent females. The deaths during the period referred to numbered 70,178, of which 33,667 were males and 36,511 were females, or, stated in percentages, the deaths of the males were 48 per cent and that of the females 52 per cent. These figures show that in Paraguay during the last 10 years more men than women were born and fewer men than women died.——The municipal authorities in Asuncion have appointed a commission to revise the NAMES OF THE STREETS of the Federal Capital. It is understood that the commission is in favor of using patriotic and historic names for that purpose.——A recent message of President Eduardo Schaerer to the National Congress recommends larger appropriations for HOSPITALS, insane asylums, and orphanages, as well as the maintenance of hospitals in Villarrica, Concepcion, and Pilar.——Steps have been taken by the city council of Asuncion to plant SHADE TREES along the streets of the Federal Capital as well as along the principal highways leading out of the city. Avenida Colombia is one of the first thoroughfares on which the trees will be systematically set out.——During the past year a large increase has been noted in the imports of Argentine WINES. These wines come principally from Mendoza, are of good quality, and are rapidly growing in favor in Paraguay. This trade is being stimulated because of the difficulty of importing European wines, and it is believed that after the close of the war the Mendoza wines will have such a hold upon the country that they can not be easily displaced by importations from the Continent.——The Paraguay Cattle Co., of Asuncion, has compiled statistics showing that there are in the Republic at the present time about 5,000,000 head of HORNED CATTLE, and that the increase is about 20 per cent per annum.

PERÚ

An Executive decree of November 10, 1915, requires PERUVIAN CONSULS abroad to attest, or otherwise validate, at any business hour before the sailing of the vessel, documents brought to them for legalization. The additional work imposed upon consuls in complying with the provisions of this decree does not entitle them to extra compensation either from the Peruvian Government or from individuals. Information which merchants or private persons request of consuls concerning matters under their jurisdiction must be attended to gratuitously and without delay, and consuls are expressly prohibited from charging any fee whatsoever for their services. It is understood that business hours in places where consuls are located are such as, according to custom, are set aside for the transaction of commercial business, but in no case shall they be less than seven hours a day.——A special session of the Peruvian Congress was called on December 11 last to consider the GENERAL BUDGET for 1916, the departmental budgets, inheritance and stamp taxes, the tariff, consular invoices, and the proposed bill for amending the electoral law.——On December 31, 1915, according to a report of the department of finance, the total DEBT of Peru was £8,589,679. ——The official newspaper of Peru of November 16, 1915, contains the full text of the MINING TAX law, as well as the decree regulating the same issued by the President on November 15, 1915.——A law of December 11, 1915, provides for the MINTAGE OF SILVER COIN in quantities of not less than 200,000 soles (sol=$0.486) per month until the demand for this coin is supplied. The coins will be made in denominations of 1, one-half, one-fifth, one-tenth, and one-twentieth sol and in such proportion as the President of the Republic may deem expedient.——In accordance with a recent Executive decree exports of INDIAN CORN, beans, and all kinds of legumes may be made direct through the customhouses without a special permit from the Government. The exportation of vicuña skins is, however, for the present prohibited.——The representatives of the Governments of Peru and Uruguay signed on December 5 last an adreferendum TREATY OF PEACE and arbitration for submission to the respective Congresses of these nations.——A POSTAL MONEY-ORDER CONVENTION was made between the Governments of Peru and Bolivia on December 20, 1915.——The President has promulgated a law providing for the erection in Lima of a MONUMENT to Francisco Pizarro, the Spanish conqueror.——The CUSTOMS REVENUES collected at Callao in 1915 amounted to

£540,840.——During the past year the PERUVIAN MINT issued gold, silver, and copper coins, respectively, to the value of £92,987, 2,011,160 soles, 280,208 centavos.——Congress has authorized the departmental board of Lima to negotiate a loan of £3,700 to be used in providing WATERWORKS AND SEWERS for Barranca, one of the suburbs of the Federal Capital.

During the latter part of November, 1915, a society was organized in the city of San Salvador with the object of making geologic, archeologic, ethnographic, and linguistic investigations concerning the Republic, as well as for the purpose of collecting data from which to prepare complete MAPS of Salvador covering these subjects. The official name of the organization is Sociedad de Estudios Americanistas de El Salvador (Society of American Studies of Salvador). The officers of the society are: Santiago I. Barberena, director; Atilio Peccorini, secretary; and Jorge Lardé, treasurer.——According to press reports preliminary steps have been taken by the Governments of Salvador and Guatemala for the establishment at an early date of an INTERNATIONAL AUTOMOBILE SERVICE for mails, passengers, and freight between Santa Ana, Salvador, and Zacapa, Guatemala, which is in direct rail communication with the city of Guatemala and Port Barrios on the Atlantic coast. It is believed that the operation of this line will greatly increase the overland commerce between the two countries through which the line passes, and will be of great convenience and effect a considerable saving in time to all who have occasion to use it.——A recent Executive decree establishes a BOARD OF SANITATION AND ADORNMENT (Junta de Saneamiento y Ornato) for the port of La Libertad, composed of the administrator of the customhouse, the commandant of the port, the mayor, a legal adviser and a treasurer whose duties are to effect in the order named, if possible, the following works: (1) Drain the swamps in and near the town, (2) supply the city with potable water, (3) pave and maintain the streets in a clean condition, (4) construct a pier at the beach, and (5) do such other things as the embellishment of the city may require. The board will have at its disposal the following funds: The proportion of the Federal revenues collected for the sanitation of the ports of the Republic set aside for the port of La Libertad and 6,000 pesos from the export taxes on coffee.——Since the middle of December, 1915, trains have been running between San Nicolas, Lempa, and Zacatecoluca,

thereby establishing direct RAILWAY COMMUNICATION between these cities and the port of La Union.——On December 25 last the MUNICIPAL PALACE at Chalatenango was inaugurated with appropriate ceremonies.——A COAL MINE, which has the appearance of a large and rich deposit, has been discovered on the Santa Lucía plantation, jurisdiction of Sensutepeque.——A recent decree of the treasury department of the Government of Salvador permits the importation of WOODS, in the rough, dressed, or in any other form, upon the payment of 50 centavos per thousand feet for customs expenses.

URUGUAY

A decree of the department of finance authorizes the customhouses of the Republic to permit FINE STOCK, shipped to neighboring countries for exhibit, to leave the country without the payment of duties, provided a guarantee is given the Government that the stock will be returned to Uruguay within a period of three months. The object of the decree is to facilitate the exhibition of Uruguayan live stock, especially in Brazil and the Argentine Republic. Uruguayan blooded stock is of such excellent quality and so attractive in appearance that it has only to be seen to be appreciated, and exhibits of this stock in near-by countries have invariably been productive of sales.——The adreferendum contract entered into by the Government of Uruguay with the Ulen Contracting Co., of Chicago, for providing the cities of Salto, Paysandu, and Mercedes with WATERWORKS AND DRAINAGE amounts, in round numbers, to 4,700,000 pesos (peso = $1.0342). Payments will be made in 6 per cent sanitary bonds at 96.5 per cent of their nominal value. These bonds are to be considered a part of the public debt and are payable out of taxes to be levied on real property of the municipalities referred to. The contract price for the use of water in these cities is not to exceed 15 centavos per 1,000 cubic meters. The amount of the sanitary bonds to be issued by the Government is limited to 5,149,800 pesos, or the equivalent of 5,000,000 pesos in cash.——According to press reports, the Government of Uruguay has contracted a LOAN of 625,000 pesos with the Montevideo branch of the National City Bank of New York. Six per cent treasury bills, redeemable within six months, were given as security. As the amount of the loan was less than 1,000,000 pesos, no special legislative authorization by Congress was necessary to enable the authorities to negotiate the loan.——The Government has introduced a bill into Congress for-

bidding the sale of ADULTERATED FOODS and beverages, and prohibiting the use of deleterious substances in their manufacture. Violations of the provisions of the bill, which requires the sanction of Congress before becoming a law, are punishable with fines of from 50 to 500 pesos.——In accordance with a report of the labor committee of the Chamber of Deputies, a bill has been introduced into the Uruguayan Congress providing, in substance, that every public or private workman or employee shall enjoy one DAY OF COMPLETE REST in each period of six days, exempting, however, offices or establishments which suspend work for one entire day in each period of six days.——Dr. Juan Carlos Blanco, ex-minister of public works of the Government of Uruguay, has been appointed MINISTER TO FRANCE.——The STOCK CENSUS of Uruguay, which was to have been taken in December last, has been postponed until February 1, 1916.——The beautiful white and variegated NATIVE MARBLES of Uruguay are to be exclusively used, whenever marble is required, in the construction of the legislative palace in Montevideo.

VENEZUELA

An Executive decree of December 11, 1915, prescribes the rules and regulations which must be observed in the OPERATION OF RAILWAYS in Venezuela.——According to statistics published by the department of fomento, the population of Venezuela on June 30, 1915, was 2,816,484 inhabitants, 136,238 of whom resided in the Federal District.——DEMOGRAPHIC STATISTICS for the first half of 1915 show 39,598 births and 28,742 deaths, or an excess of births over deaths of 10,856. The number of marriages during the same period was 3,593. The total increase in population during the six months in question was 11,168.——A ruling of the department of fomento requires a payment by the concessionaire of 600 bolivares (1 bolivar = $0.193) for issuing and registering each permit for the exploitation of MANGROVE FORESTS (Mangle) over an area of 1,250 hectares.——During the latter part of December, 1915, a meeting of STOCKGROWERS was held in Barcelona, capital of the State of Anzoategui, for the purpose of collecting funds for the purchase of bulls and other breeding stock to be used to improve the cattle of that State.——A company was recently organized at Yuruary, State of Bolivar, to establish an AUTOMOBILE SERVICE in that municipality. The necessary capital was subscribed and arrangements made to order the machines from abroad, probably from the

United States.——A recent Executive decree establishes a SCHOOL OF MEDICINE in Caracas, to take the place of the School of Practical Medicine authorized under a decree of April 3, 1915.——According to newspaper reports the Spanish-Venezuelan Co., which has just been organized in Spain for the manufacture of TEXTILES in the port of Altagracia, State of Zulia, has seven large buildings under construction, four of which will be completed within a few months. The company then proposes to commence operations. It is the intention of this company to bring into the country a considerable number of Spanish families skilled in the manufacture of cloth and the cultivation of cotton. These families will teach the natives modern methods of cotton cultivation as well as the art of manufacturing cotton fabrics. The company expects to employ about 500 Venezuelans in its factories. Native cotton will be used in the manufacture of the textiles produced by the company.——An Executive decree of December 19 last changes the name of the Venezuelan WARSHIP *Zumbador* to *José Félix Rivas* in honor of the Venezuelan hero and patriot of that name. The warship *Julia* has been renamed *Salias* in honor of the Salias brothers, who so nobly shed their blood for the independence and liberty of their country.——A monthly MAGAZINE entitled "Multicolor" was established in Caracas in December last. The new publication will treat of commerce, domestic affairs, society, science, and national literature.——The governor of the State of Portuguesa has been authorized by the department of fomento to build an official TELEPHONE LINE, 75 kilometers long, between Auraura and Agua Blanca.

ARGENTINA · BOLIVIA · BRAZIL · CHILE · COLOMBIA · COSTA RICA · CUBA · DOMINICAN REPUBLIC · ECUADOR · GUATEMALA · HAITI · VENEZUELA · URUGUAY · UNITED STATES · SALVADOR · PERU · PARAGUAY · PANAMA · NICARAGUA · MEXICO · HONDURAS

FEBRUARY · · · · · 1916

BULLETIN OF THE PAN AMERICAN UNION

JOHN BARRETT, DIRECTOR GENERAL.
FRANCISCO J. YÁNES, ASSISTANT DIRECTOR.

LAKE AMATITLAN, GUATEMALA.

GOVERNING·BOARD·OF·THE PAN AMERICAN UNION

ROBERT LANSING, Secretary of State of the United States,
Chairman *ex officio*.

AMBASSADORS EXTRAORDINARY AND PLENIPOTENTIARY

Argentine Republic...Señor Dr. RÓMULO S. NAÓN.[1]

Brazil .....Senhor DOMICIO DA GAMA,
Office of Embassy, 1780 Massachusetts Avenue, Washington, D. C.

Chile .....Señor Don EDUARDO SUÁREZ MUJICA,
Office of Embassy, 1013 Sixteenth Street, Washington, D. C.

Mexico .....(Absent.)

ENVOYS EXTRAORDINARY AND MINISTERS PLENIPOTENTIARY

Bolivia .....Señor Don IGNACIO CALDERÓN,
Office of Legation, 1633 Sixteenth Street, Washington, D. C.

Colombia .....Señor Dr. JULIO BETANCOURT,
Office of Legation, 1319 K Street, Washington, D. C.

Costa Rica .....Señor Don MANUEL CASTRO QUESADA.
Office of Legation, 1501 Sixteenth Street, Washington, D. C.

Cuba .....Señor Dr. C. M. DE CÉSPEDES.[1]

Dominican Republic..Señor Dr. A. PÉREZ PERDOMO,
Office of Legation, "The Champlain," Washington, D. C.

Ecuador .....Señor Dr. GONZALO S. CÓRDOVA,
Office of Legation, 604 Riverside Drive, New York City.

Guatemala.....Señor Don JOAQUÍN MÉNDEZ,
Office of Legation, 1604 K Street, Washington, D. C.

Haiti .....M. SOLON MÉNOS,
Office of Legation, 1429 Rhode Island Avenue, Washington, D. C.

Honduras.....Señor Dr. ALBERTO MEMBREÑO.[1]

Nicaragua.....Señor Don EMILIANO CHAMORRO,
Office of Legation, "Stoneleigh Court," Washington, D. C.

Panama .....Señor Dr. EUSEBIO A. MORALES,
Office of Legation, "Stoneleigh Court," Washington, D. C.

Paraguay .....Señor Dr. HÉCTOR VELÁZQUEZ,
Office of Legation, 1678 Woolworth Building, New York, N. Y.

Peru.....Señor Don FEDERICO ALFONSO PEZET,
Office of Legation, 2223 R Street, Washington, D. C.

Salvador.....Señor Dr. RAFAEL ZALDIVAR,
Office of Legation, 1800 Connecticut Avenue, Washington D. C.

Uruguay.....Señor Dr. CARLOS M. DE PENA,
Office of Legation, 1734 N Street, Washington, D. C.

Venezuela .....Señor Dr. SANTOS A. DOMINICI,
Office of Legation, 1406 Massachusetts Avenue, Washington, D. C.

CHARGÉS D'AFFAIRES

Argentina.....Señor Don FEDERICO M. QUINTANA,
Office of Embassy, 1806 Corcoran Street, Washington, D. C.

Cuba .....Señor Dr. J. R. Torralbas,
Office of Legation, 1529 Eighteenth Street, Washington, D. C.

Honduras.....Señor Don R. CAMILO DÍAZ,
Office of Legation, 31 Broadway, New York, N. Y.

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[1] Absent.

PRESIDENT BELISARIO PORRAS, OF PANAMA, AND HIS CABINET.

On the President's left is Sr. Don Ernesto T. Lefevre, secretary of foreign affairs; on his right, Sr. Don Juan B. Sosa, secretary of interior and justice; next to Secretary Lefevre is Sr. Don Aurelio Guardia, secretary of finance and treasury. Sr. Don Guillermo Andreve, secretary of public instruction; and Sr. Don Ladislao Sosa, acting secretary of promotion (fomento), are sitting next to the secretary of the interior.

BULLETIN
OF THE PAN AMERICAN UNION

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MEMBERS ON THE INTERNATIONAL HIGH COMMISSION.

THE representatives of the United States on the International High Commission, to meet in Buenos Aires April 3–15, include: Secretary of the Treasury, William G. McAdoo, chairman; Duncan U. Fletcher, Senator from Florida; Andrew J. Peters, Assistant Secretary of the Treasury; Paul M. Warburg, member of the Federal Reserve Board; John H. Fahey, ex-president and honorary vice president of the United States Chamber of Commerce; Samuel Untermyer, attorney, of New York; Archibald Kains, governor of the Federal Reserve Bank of San Francisco, who goes as an expert attaché on exchange; J. Brooks B. Parker and Dr. C. E. McGuire, assistant secretaries general. Prof. Leo S. Rowe is secretary general of the commission, but he will be unable to accompany the party. The High Commission is an outgrowth of the Pan American Financial Conference of May, 1915. Its general purpose is to establish uniformity of laws on the Western Continent, and the program includes questions relating to transportation, banking, credits, exchange, commercial disputes, uniform customs regulations, money-order facilities, commercial travelers and their samples, patent and trade-mark laws, and other subjects of common interest to the financial and commercial intercourse of the Americas. The wives of three of the members of the commission, Mrs. McAdoo, Mrs. Peters, and Mrs. Untermyer, will accompany the party. Secretary of the Navy Josephus Daniels has designated the armored cruiser *Tennessee* to carry the commissioners to South America. According to present plans, the *Tennessee* will sail from Hampton Roads, Va., March 8, proceeding direct to Rio de Janeiro, where the party will spend a day or two. From there a visit by rail will be made to São Paulo and Santos; proceeding from Santos on the *Tennessee* the party will go to Montevideo, where it is planned to also spend a day or two. From Montevideo the commissioners will proceed to Buenos Aires, where they will remain until after the adjournment of the conference. Leaving Buenos Aires April 17, they will go by train

Photo of Mr. Warburg by Pach Bros.; of Mr. Untermyer by Paul Thompson; of Dr. McGuire by Clinedinst; all others by Harris-Ewing.

THE UNITED STATES SECTION OF THE INTERNATIONAL HIGH COMMISSION WHICH WILL MEET AT BUENOS AIRES, APRIL 3–15, 1916.

In the center is Secretary of the Treasury William G. McAdoo, chairman; on his right is Duncan U. Fletcher, Senator from Florida; on his left, Andrew J. Peters, Assistant Secretary of the Treasury. Top row, left to right: Paul M. Warburg, member of the Federal Reserve Board; John H. Fahey, honorary vice president of the United States Chamber of Commerce; Samuel Untermyer, attorney, of New York. Bottom row, center: Archibald Kains, governor of the Federal Reserve Bank of San Francisco; on his right, J. Brooks B. Parker, and on his left, Dr. C. E. McGuire, assistant secretaries general.

Photos by Harris-Ewing.

SAILING OF THE UNITED STATES SECTION OF THE INTERNATIONAL HIGH COMMISSION ON THE UNITED STATES CRUISER "TENNESSEE," FROM HAMPTON ROADS, VA., MARCH 8, 1916, TO THE CONFERENCE AT BUENOS AIRES, ARGENTINA.

Upper picture, right to left: Archibald Kains, Samuel Untermyer, Wm. G. McAdoo, Duncan U. Fletcher, Andrew J. Peters, John H. Fahey, and J. B. B. Parker, of the Commission; Dr. G. A. Sherwell, chief translator; C. M. Branch, translator; S. J. Katzberg and T. A. Gray, stenographers. Center picture: Secretary of the Treasury and Mrs. McAdoo on board the *Tennessee*. Lower picture: The cruiser *Tennessee* steaming out of Hampton Roads en route for South America. In the distance, to the left, is the President's yacht, the *Mayflower*, which carried the party from Washington to Hampton Roads.

across the Andes to Santiago and Valparaiso, while the *Tennessee* will steam southward through the Strait of Magellan and meet the party at the latter port. From here they will touch at Callao, pay a visit to Lima, and then returning to Callao will return to the United States via the Panama Canal. The entire journey will consume about ten weeks.

ADVISER ON PAN AMERICAN AFFAIRS.

A consultation office has just been established in Washington and New York, under the direction of John Vavasour Noel, for the purpose of assisting those contemplating investment or travel in Latin America with proper advice and expert opinion. Mr. Noel has enjoyed a wide experience as a publisher and newspaper man in Latin America for a period of years, and is well known among the press and journalists as the former owner of three publications on the West Coast of South America. He couples a knowledge of officials and conditions in the southern countries with a similar acquaintance here, and proposes to offer, through his office, information dealing with human factors as well as statistics, and to furnish impartial and capable advice on specific financial and commercial subjects. Mr. Noel was actively identified with the Second Pan American Scientific Congress recently held in Washington. The Washington office of this consultation bureau is located in the Colorado Building, and the New York office at 116 Nassau Street.

FINANCIAL AND COMMERCIAL COMMISSIONS TO LATIN AMERICA.

James A. Farrell, president of the United States Steel Corporation and chairman of the Latin American Return Visit Committee, is to be complimented upon the success which has accompanied the organization of the visiting parties leaving the United States for Latin America. The first party, known as the "Financial and Commercial Commission to Central America," sailed from New Orleans on the United Fruit Co.'s steamer *Abangarez* on February 2, and the second party, destined for Uruguay and Paraguay, has also been organized and is now on its way. In their composition the commissions are splendidly typical of the healthy, active spirit which characterizes the present campaign in the interests of the development of closer and more satisfactory commercial relations between the United States and her neighbors to the south. The personnel of the Central American commission is as follows: Chairman, Lamar C. Quintero, a well-known lawyer of New Orleans; John Clausen, manager foreign department, Crocker National Bank, of San Francisco, Cal.; Ernest C. Ling, manager foreign trade department, National City Bank, New York City; J. P. Ripley, engineer, of the firm of J. G. White & Co., of New York City; Thomas J. Walker, vice president First

HON. JOSEPH H. SHEA, AMBASSADOR OF THE UNITED STATES TO CHILE.

Joseph Hooker Shea, recently appointed United States Ambassador to Chile, was born in the State of Indiana in 1863. He graduated from the Indiana State University in 1889 and is a member of its board of trustees. After being admitted to the bar he served as prosecuting attorney, judge of the circuit court, and was for two terms a member of the State Senate. At the present time he occupies the position of chief justice of the appellate court.

National Bank, San Fernando, Cal.; and Roger W. Babson, president Babson's Statistical Corporation, Boston, Mass. A. A. Biddle accompanied the party as secretary.

The sailing of the Central American party was made the occasion of an active demonstration by the people of New Orleans, indicating their live interest in movements affecting the interests of the country in general. A large delegation representing the New Orleans Association of Commerce was present and extended their best wishes to the party in its commendable endeavors.

The personnel of the Uruguay-Paraguay Commission includes Frank H. Wesson, of Smith & Wesson, Springfield, Mass.; A. H. Titus, of the National City Bank, of New York; W. E. Hinchcliff, president Burson Knitting Co., Rockford, Ill.; and Thomas A. Crimmins, of Crimmins & Peirce Co., Boston, Mass. Of this number Mr. Wesson and Mr. Titus are already in South America, and Mr. Hinchcliff and Mr. Crimmins are en route for Montevideo, at which point the entire delegation will assemble and formulate their report to be submitted to the International High Commission at its meeting in Buenos Aires April 3, 1916.

These parties are two of seven of generally similar nature to visit other groups of Latin American countries under appointment by the Hon. W. G. McAdoo, Secretary of the Treasury of the United States, and representing interests participating in the Pan American Financial Conference held at Washington in May, 1915. It is almost certain that substantial benefit will result from the series of investigations made by these different visiting parties; this particularly because in their composition are included the most eminent financial, commercial, and technical experts of the United States.

IMPORTANT COMMERCIAL CONVENTIONS.

Two of the most influential business organizations in the United States have recently held their annual sessions, and after several days of serious discussions and deliberations have adjourned to carry into practical operation the theories and suggestions developed in the meetings. First came the third annual convention of the National Foreign Trade Council at New Orleans, La., January 27–29, where nearly 400 delegates from the leading commercial and industrial concerns of the country participated. In addition to the general meetings, group sessions were held at which particular phases of foreign trade were considered by delegates especially interested in them. Facilities for obtaining detailed information regarding either markets or trading methods were afforded the delegates through the presence of a number of trade experts detailed by the Department of State, the Bureau of Foreign and Domestic Commerce, and the Pan American Union, as well as from experienced exporters and importers who

Photo by Frank B. Moore, New Orleans.

FINANCIAL AND COMMERCIAL COMMISSION TO CENTRAL AMERICA.

The first of seven return-visit commissions, resulting from the Pan American Financial Conference of May, 1915, to tour groups of Latin American countries. Seated is Lamar C. Quintero, lawyer, of New Orleans; standing, left to right: Ernest C. Ling, manager foreign trade department, National City Bank, New York; A. A. Biddle, who accompanies the commission as secretary; Roger W. Babson, president Babson's Statistical Corporation, Boston; John Clausen, manager foreign department Crocker National Bank, San Francisco; J. P. Ripley, engineer, J. G. White & Co., New York; Thomas J. Walker, vice president First National Bank, San Fernando.

offered their services. On Friday, January 28, a banquet was held at the Grunewald Hotel attended by over 500 delegates and guests. Significant speeches dealing with vital commercial and industrial problems in the United States as they affect foreign trade expansion were features of the occasion. The speakers at the banquet included: Frank A. Vanderlip, president National City Bank of New York; Fairfax Harrison, president Southern Railway Co.; and Joseph E. Davies, chairman of the Federal Trade Commission. Edgar H. Farrar presided as toastmaster.

From February 8 to 10, the fourth annual meeting of the United States Chamber of Commerce took place at Washington, D. C., some of the sessions being held at the Willard Hotel and others at the building of the Pan American Union. Nearly a thousand delegates, representing officially over 300 organization members of the national chamber, were present. The report of the board of directors showed that during the year referenda were taken to ascertain the sentiment of the business world on three important questions, the merchant marine, improvement of the commercial service of the United States abroad, and on a business method for assuring future world peace. Following the address by President John H. Fahey, the reports of the chamber's special committees on vital national business subjects were presented by the different chairmen and discussed in open meeting. The committee appointed to consider a code for the arbitration of commercial disputes between the business men of the United States and those of Argentina reported that the Chamber of Commerce of Buenos Aires had substantially agreed with this body upon such a code. The appointment of this committee is an outgrowth of a project initiated at the Pan American Financial Conference. The delegates were addressed by a number of eminent speakers, including President Wilson, Secretary of the Navy Josephus Daniels, Secretary of Commerce William C. Redfield, Vi Kyuin Wellington Koo, the Chinese minister, Senator Duncan U. Fletcher, of Florida; Dr. Ernest F. Nichols, president of Dartmouth College; President Howard Elliott of the New York, New Haven & Hartford Railroad; and Mr. E. A. Filene, of Boston. At the banquet, which closed the three days' meeting, President Wilson delivered the address. It was in the nature of a message to the business men of the United States, in which he expressed the belief that a permanent tariff commission and a real American merchant marine were two things which would soon be accomplished facts. The terms of 13 directors of the chamber expired with the meeting, and elections were held to fill the places. Mr. R. G. Rhett, president of the People's National Bank of Charleston, S. C., was elected president to succeed Mr. Fahey, who had been at the head of the national chamber since 1914 and who was elected to the position of honorary vice president.

Photograph by Harris-Ewing.

DELEGATES TO THE FOURTH ANNUAL MEETING OF THE CHAMBER OF COMMERCE OF THE UNITED STATES HELD AT WASHINGTON, D. C., FEBRUARY 8-10, 1916.

There were practically a thousand individual delegates and alternates in attendance representing officially over 300 organization members of the National Chamber. In addition there were a large number of individual members and guests. A unique feature of the banquet was a transcontinental telephone demonstration. A telephone connection was placed at each diner's plate and at a given moment the guests were delighted by hearing San Francisco and intermediate points talk and in listening to words of greeting from the governor of California and the governor of Nebraska, several thousand miles distant from the scene of the dinner.

PAN AMERICAN EXPOSITION IN 1918 AT SAN ANTONIO, TEX.

San Antonio, the cradle of Texan liberty and the historic home of the Alamo, will celebrate, in 1918, the two hundredth anniversary of its settlement by the Franciscan Friars. In connection with this commemoration it is planning to hold an exposition, Pan American in scope and character, in which all the Nations of the American Continent will be invited to participate. Already the preliminary plans have been outlined and an initial jubilee was held in that city January 25 to 27, 1916, when definite steps were taken for the permanent organization of the committees. Public mass meetings, a gala parade, lunches, and a banquet were the chief features of the jubilee and great enthusiasm was manifested in the proposed exposition. Every city, hamlet, and town in the vast State of Texas sent representatives to pledge their support, while high officials of city and State offered support and cooperation. Messages were received from President Wilson, Secretary Lansing, Director General Barrett, Senators, Congressmen, and other prominent men throughout the country. Hon. Edwin F. Sweet, Assistant Secretary of Commerce, representing that department, and Harry O. Sandberg, representing the Pan American Union, were among the principal speakers at the various meetings. An event which received unanimous applause from press and public was the adoption of a set of resolutions at one of the full sessions conveying felicitations to the distinguished members of the governing board of the Pan American Union for their notable work in developing closer Pan American relations. A committee of 100, with George Armistead as chairman, and Miss Nova Herndon as secretary, were in charge of the jubilee.

WESTERN TRIP OF THE DIRECTOR GENERAL.

A fair idea of how extensively the spirit of Pan Americanism is dominating the thought and study of the United States may be gathered from the invitations which this organization is constantly receiving from all sections of the country for addresses on the engaging subject. A few of the invitations from the West which it has been possible for the director general to accept include speeches at the Young Men's Business Club, Cleveland, Ohio, February 18; at the Illinois State Bar Association, Chicago, Ill., on the 19th; before the Greater Des Moines Committee, Des Moines, Iowa, on the 21st; before the Rand Memorial Lecture Course, Burlington, Iowa, on the 22d; and before the Chamber of Commerce, Freeport, Ill., on the 23d.

INAUGURATION OF PRES. SANFUENTES OF CHILE

HIS EXCELLENCY Sr. Don Juan Luis Sanfuentes was formally inaugurated President of the Republic of Chile on Thursday, December 23, 1915. Details of the elaborate ceremonies have just come to hand, and indicate that the transmission of the executive power to the new executive by the retiring President, His Excellency Ramon Barros Luco, was an event which will go down as one of the most interesting and brilliant in the history of the country.

The ceremonies at Santiago, the capital, were attended with all the magnificence of military pomp and civic splendor. Distinguished embassies from neighboring sister countries came on special mission and joined with the resident diplomatic corps in participating at the various functions; prominent military and naval officers, resplendent in their uniforms, added color to the scenes; high Government officials from all the Provinces were present to pay their respect to the retiring executive and to felicitate the incoming one. And, adding spirit and enthusiasm to the entire occasion, were the vast crowds of patriotic citizens who thronged the streets and plazas.

In addition to the customary formal and official proceedings at the National Congress, there was solemnized a Te Deum service at the Metropolitan Church, and then commenced a series of visits of courtesy, luncheons, and dinners, theater performances, military parades, aviation exhibitions, and numerous other events which were enjoyed by all.

Thursday, December 23, was the day on which the actual induction to office took place, but the beginning of the ceremonies occurred on the preceding day, when President Barros Luco received the special credentials of the ambassador of Argentina, Sr. Dr. Romulo S. Naón, of Ambassador Luis R. de Lorena Ferreira, of Brazil; of Sr. Don Eduardo Poirier, special delegate from Guatemala; and of Sr. Don Juan Cuestas, minister plenipotentiary on special mission from Uruguay. That evening at the Union Club the Government offered a banquet to the special missions, in which members of the cabinet, the resident diplomatic corps, and a select list of guests participated. The hall was brilliantly illuminated and decorated; warm cordiality reigned supreme, and fraternal and eloquent were the speeches made on that occasion.

On the afternoon of Thursday the inauguration took place at the National Congress. First arrived the retiring President, escorted by members of his cabinet and a military and naval detachment. Then

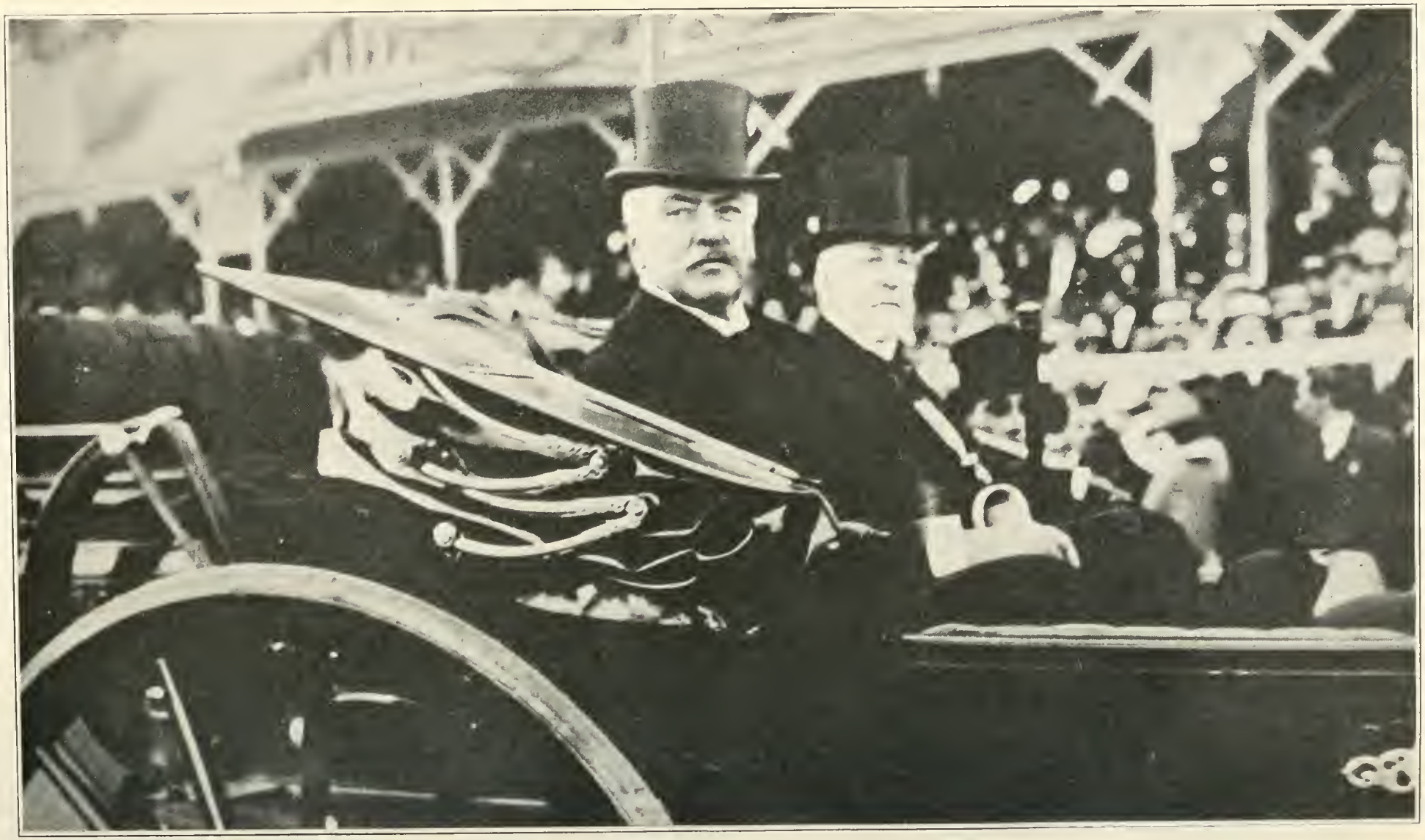


Photo by Janet M. Cummings.

HIS EXCELLENCY SR. DON JUAN LUIS SANFUENTES, INAUGURATED PRESIDENT OF CHILE, DECEMBER 23, 1915.

The President is accompanied by the chief of cabinet.

Photo by Janet M. Cummings.

HIS EXCELLENCY SR. DON RÓMULO S. NAÓN.

Ambassador extraordinary and plenipotentiary of the Argentine Republic, who headed a special embassy to Chile to participate in the inaugural ceremonies. Dr. Naón is the Argentine ambassador to the United States, but at that time was visiting in his own country. The ambassador is on the extreme left.

came President-elect Sanfuentes, accompanied by his ministers. The streets and plazas adjacent to the public buildings were lined with soldiers and bands, while gay flags and bunting waved in the breezes. From without, loud cheering and applause mingled with the martial strains of the music announced the arrival of each executive. Within, a large gathering of distinguished guests had assembled in the salon of honor to witness the transmission of power.

The joint session of Congress was formally opened and then all proceeded to the salon of honor. Here Sr. Don E. Charme, president of the Senate and of the joint chamber, administered the oath of office to the president-elect. The act was witnessed by the national senators and deputies, the special embassies and missions, the resident diplomatic corps headed by Hon. Henry P. Fletcher, the ambassador from the United States, and by many others prominent in official and social life of Chile. At the conclusion of the ceremony, retiring President Barros Luco divested himself of the presidential insignia, which he placed in the hands of the president of the Senate, who in turn invested the newly inaugurated chief executive with it.

This event over, the President, accompanied by the chairmen of both houses of Congress, together with all those in the salon, proceeded to the Metropolitan Church. The soldiers all along the line were called to attention and stood at "present arms" while the official party passed. At the portals of the temple the party was met by a committee, including the archbishop of Santiago, the Very Rev. Mgr. Juan Ignacio Gonzalez Eysaguirre, and other church dignitaries. At the conclusion of this service the President held a reception at the palace, where he received congratulations and personal expressions of good will and wishes from the diplomats and hosts of officials and friends.

After the reception, the President, accompanied by his cabinet and an escort of troops, called on ex-President Barros Luco at his home. The latter, surrounded by his family and friends, offered sincere wishes for a prosperous and happy administration. Shortly after, Sr. Barros Luco returned the courtesy of the visit to the home of President Sanfuentes. Then came an exchange of visits between the President and the Archbishop.

That night a select concert was held at the Municipal Theater in honor of the President and the foreign delegates who were participating in the inaugural festivities. The auditorium presented a brilliant spectacle with all the boxes and seats occupied by distinguished officials and society people accompanied by their ladies and families. The program was received with generous applause and during one of the intermissions, the chief alcalde of the municipality received in the municipal box in honor of the President and the visiting diplomats.

Photo by Janet M. Cummings.

AMBASSADORS AND MINISTERS OF THE CENTRAL AND SOUTH AMERICAN COUNTRIES PARTICIPATING IN THE INAUGURATION OF PRESIDENT SANFUENTES OF CHILE, DECEMBER 23-24, 1915.

Among the special missions present were the embassy from Argentina, headed by Dr. Naón; the embassy from Brazil, including Ambassador Luis R. de Lorena Ferreyra and Minister Luis Martins da Souza Dantas; the special delegate from Guatemala, Sr. Don Eduardo Poirier; Minister Juan Cuestas of Uruguay, on special mission. The resident diplomatic representatives from these countries were Sr. Don Enrique Perez Cisneros, minister of Cuba; Sr. Don Carlos F. Gomez, minister of Argentina; Sr. Don Claudio Pinilla, minister of Bolivia. Sr. Don Miguel A. Icaza, chargé d'affaires of Ecuador.

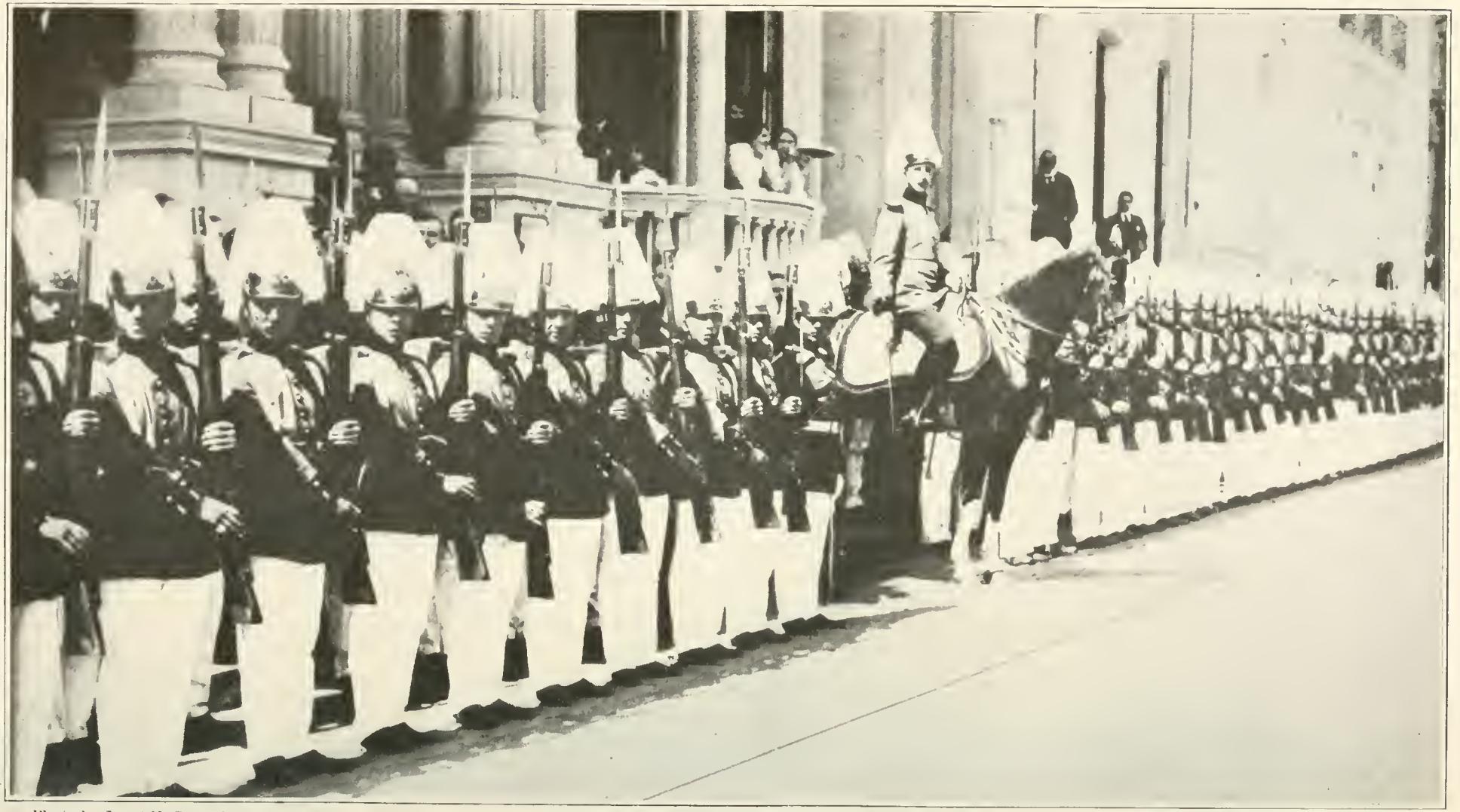


Photo by Janet M. Cummings.

CADETS OF THE MILITARY SCHOOL OF CHILE.

The smart-looking military school cadets, the "West Pointers of Chile," attracted much attention during the military maneuvers of the inaugural festivities.

On the following day a series of military exhibitions and maneuvers was given in honor of the visiting guests. The day started with special exercises at the cavalry school, at the conclusion of which the guests were entertained by the minister of war at a banquet served in the school building. Late in the afternoon a spectacular military review took place in Cousiño Park, and the great crowds that assembled there applauded the brilliant and snappy appearance of the army and of the cadets from the military school, and enjoyed the clever maneuvers. A feature of drill which thrilled the spectators was the flying exhibition held under the direction of the Army School of Aeronautics. Five machines, piloted by military aviators, circled and hovered around the ellipse of the park during the maneuvers, and flew above the perfect lines of soldiers, as they passed in review before the presidential stand.

As a closing event the President himself was host at a State banquet held in the National Palace to which were invited the special embassies, the foreign delegations, the diplomatic corps, and high official dignitaries.

Thus was inaugurated the new President of Chile for a term of five years. During the celebrations joyful expressions of good will and satisfaction greeted the new President, while generous and sincere tributes were paid to the retiring executive for his able administration and public spirit. And the following day, which was Christmas, found the entire Republic of Chile in perfect tune and harmony with its own spirit of "Peace on earth, good will toward men."

THE TUCUMAN DECLARATION OF INDEPENDENCE

ONE of the great dates of the South American revolutionary period is July 9, 1816, for then was signed, in the little city of Tucuman, nestling under the Andes in what is now the Republic of Argentina, the declaration of independence which severed the provinces of the La Plata viceroyalty from Spain and the Spanish Crown. To fittingly commemorate the centenary anniversary of this event the chief executive of Argentina, in March, 1914, appointed by decree a committee to be called the National Committee on the Centenary, to arrange for a dignified and suitable celebration in the city of Tucuman of the centennial anniversary of this notable event. The decree provides that the committee shall take into account specially the following:

That the celebration most appropriate in commemoration of the Congress of Tucuman is a manifestation of the position attained by the Republic in intellectual and material development.

That foreign participation is to be distinguished from, without being inferior to, that resulting from the cordiality of our foreign relations in the centenary of 1910.

That buildings as far as possible shall be of such a character as to be adapted subsequently to public uses.

The committee appointed by the chief executive was as follows: Lieut. Gen. Julio A. Roca; Dr. José Evaristo Uriburu; Dr. Jose Figueroa Alcorta, ex-President of the Republic; Dr. Norberto Quirno Costa, ex-vice-President of the Republic; Sr. Bridigo Teran and Dr. Manuel Esteves, senators from the Province of Tucuman; Dr. Joaquín S. de Anchorena, municipal intendente of Buenos Aires; Dr. Manuel M. de Iriondo, president of the Bank of the Argentine Nation; and Dr. Luis Ortiz Basualdo, president of the conversion office. The committee will be presided over by the minister of the interior.

Since its appointment the committee has been busily engaged in arranging for the celebration, but has not yet published the complete program. However, invitations have been extended to a number of scientific, literary, and patriotic societies to meet at Tucuman in July of this year on the occasion of this celebration. The Congreso Americano de Bibliografia e Historia has, among others, appointed an organization committee to take charge of its part of the centennial celebration at Tucuman. The Congreso Americano de Ciencias Sociales will also convene in Tucuman on the occasion and has

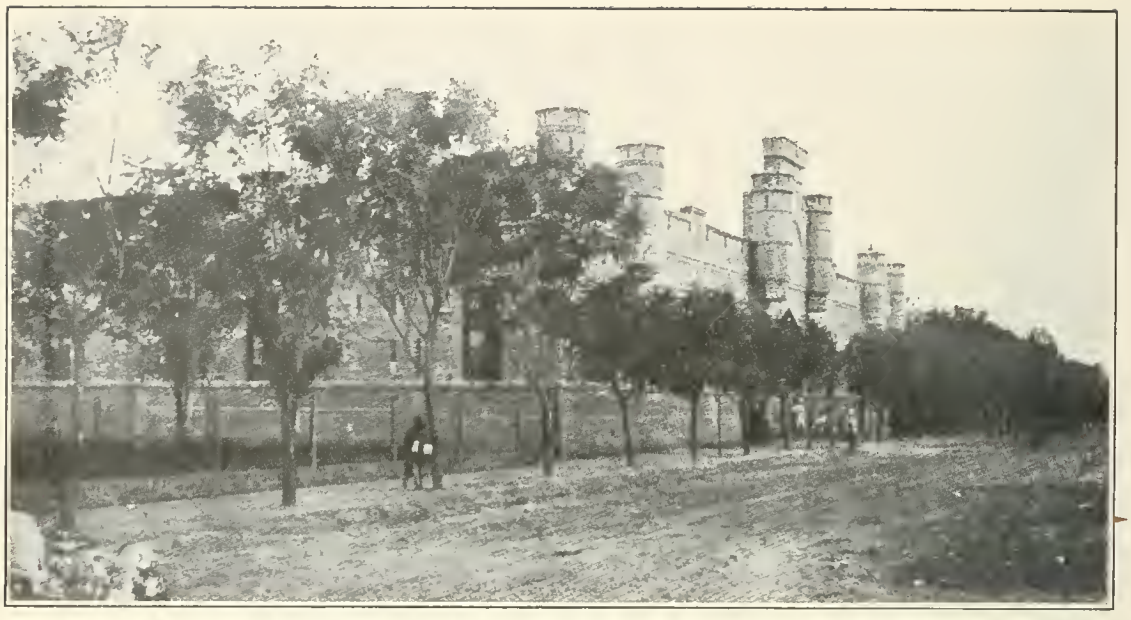
VIEW OF TUCUMAN, CAPITAL OF THE PROVINCE OF TUCUMAN, IN ARGENTINA, SHOWING ONE OF THE PRINCIPAL STREETS.

ON A SUGAR ESTATE IN THE PROVINCE OF TUCUMAN. THE RESIDENCE OF THE OWNER.

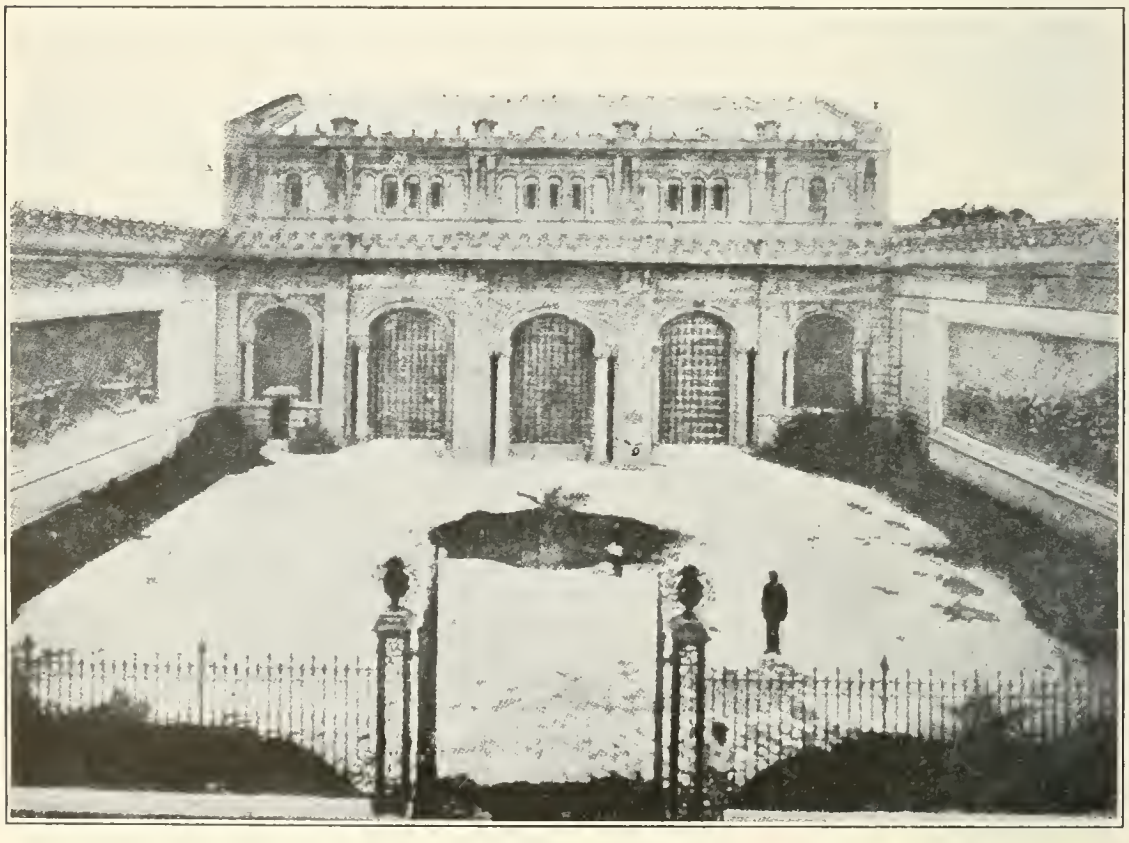
ANOTHER STREET SCENE IN THE CITY OF TUCUMAN.

CITY OF TUCUMAN, POLICE HEADQUARTERS.

CITY OF TUCUMAN, STATUE OF LIBERTY.



CITY OF TUCUMAN. FIRE DEPARTMENT HEADQUARTERS.



BUILDING INCLOSING THE HISTORIC HOUSE OR INDEPENDENCE HALL IN TUCUMAN.

already published its program for this occasion. A number of other societies are at present making arrangements for like celebrations at Tucuman.

The city and Province of Tucuman is one of the most interesting and perhaps the most picturesque of all the Argentine Provinces. The city, to give it its full title, San Miguel de Tucuman, lies on the right bank of the Salí or Dulce River, 780 miles northwest of Buenos Aires. It has an estimated population of about 60,000. Like most Spanish American cities it is laid out on the checkerboard fashion, the same plan that has been adopted in most of the newer cities of the United States. It was founded in 1565 by Diego Villaruel at the confluence of the Salí and Monteros Rivers, but frequent inundations led to its removal to its present site in 1585. In 1680 it succeeded Santiago del Estero as the capital of the Province of Tucuman; at that time under the rule of the viceroy of Lima. In 1776 the viceroyalty of La Plata was created and Tucuman transferred to its jurisdiction. The State of Tucuman is one of the smaller of the Argentine States but is the most thickly populated of them all. Its character is generally tropical. It is the center of the sugar-producing industry and lies at the foot of the Andes in the northwest of Argentina and includes on its western rim some of the high peaks of the great Cordilleras.

Tucuman, at the beginning of the nineteenth century a city of some ten or twelve thousand population, was chosen as the meeting place of the delegates to the National Congress of the United Provinces of the Rio de la Plata. The delegates met and began their deliberations on March 24, 1816. On April 26 they elected as the supreme director Juan Martin de Pueyrredón, but the significant act of this Congress was the promulgation of the declaration of independence which was signed on the closing day of the Congress, July 9, 1816. This proclamation was in response to the demand for independence which was making itself heard as an irresistible force in all the Spanish-American colonies from Mexico to Argentina and Chile.

Unlike the Declaration of Independence of the United States, the Tucuman declaration was short, but it was proclaimed with the utmost ardor by the assembled delegates. When the president of the Congress, Don Francisco Narciso de Laprida, deputy for San Juan, put the question: "Shall the United Provinces become a nation, free and independent of Spain and its kings?" the response was unanimous and enthusiastically in the affirmative, and immediately thereafter all the representatives attached their signatures to the declaration, as follows:

We, the representatives of the United Provinces of South America, assembled in general congress, invoking the Eternal who presides over the universe, in the name and by the authority of the people we represent, protesting to Heaven, to the nations,

Courtesy of The Outlook.

ARGENTINA'S SACRED INDEPENDENCE HALL.

In this little building in Tucuman the first Constitutional Assembly met and, on July 9, 1816, declared the independence of the "United Provinces of the Rio de la Plata." In order to preserve the small structure a large building has been erected which entirely incloses it and thus protects this Mecca for Argentine patriots.

Courtesy of The Outlook.

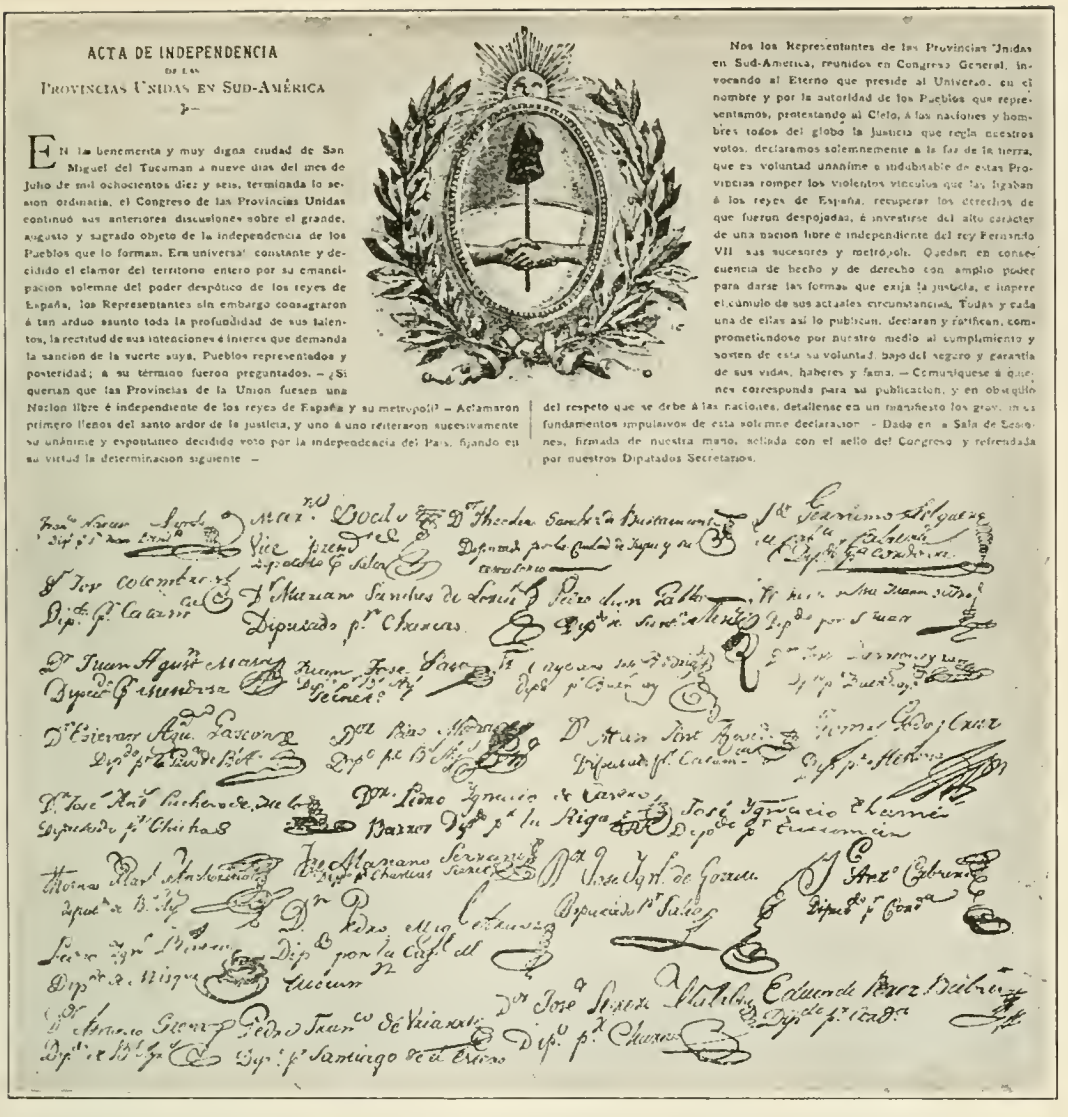
INTERIOR OF THE INDEPENDENCE HALL AS IT NOW APPEARS.

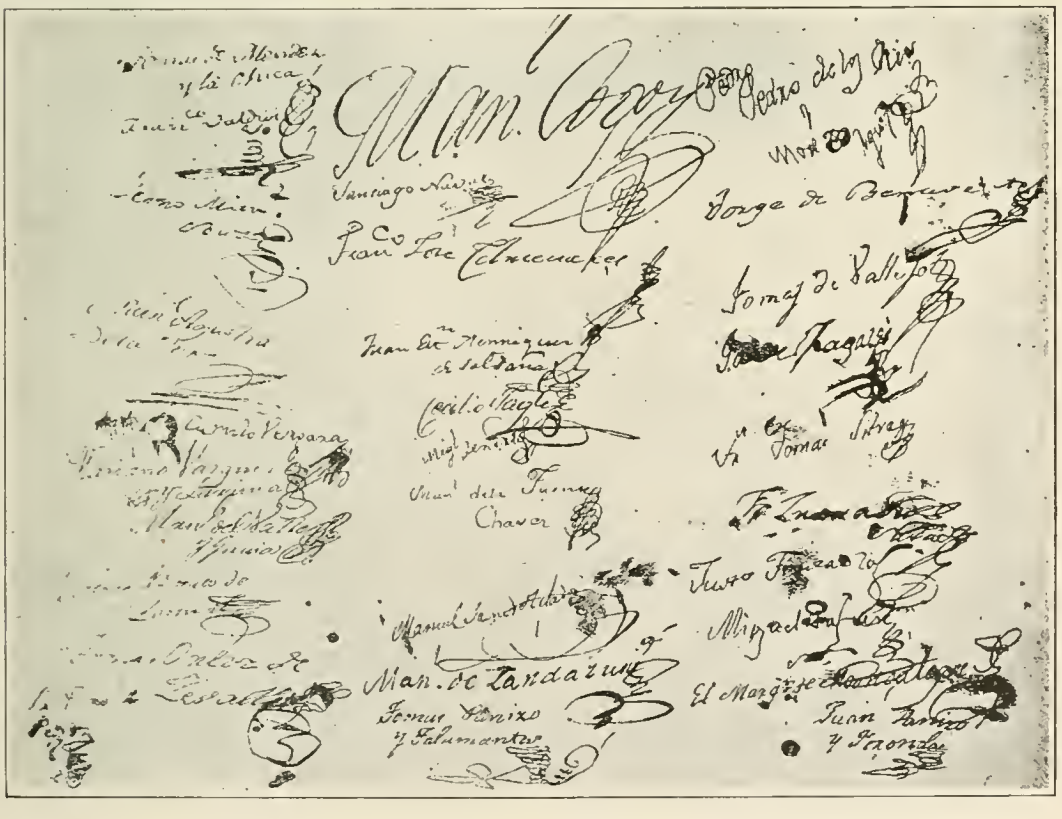
In this plain and unpretentious hall the Constitutional Assembly met and formulated the Declaration of Independence. They vested the executive authority in a Supreme Director, and elected Don Juan Martin de Pueyrredon to serve in that capacity. In 1824 the executive power was vested in a President of the Republic, and Don Bernardo Rivadavia was elected and inaugurated on February 7, 1825.

ACTA DE INDEPENDENCIA
DE LAS
PROVINCIAS UNIDAS EN SUD-AMÉRICA

En la benemerita y muy digna ciudad de San Miguel del Tucuman á nueve dias del mes de Julio de mil ochocientos diez y seis, terminada la sesion ordinaria, el Congreso de las Provincias Unidas continuó sus anteriores discusiones sobre el grande, augusto y sagrado objeto de la independencia de los Pueblos que lo forman. Era universal constante y decidido el clamor del territorio entero por su emancipacion solemne del poder despótico de los reyes de España, los Representantes sin embargo consagraron á tan arduo asunto toda la profundidad de sus talentos, la rectitud de sus intenciones é intereses que demanda la sancion de la suerte suya, Pueblos representados y posteridad; á su término fueron preguntados. – ¿Si querian que las Provincias de la Union fuesen una Nacion libre é independiente de los reyes de España y su metropoli? – Aclamaron primero llenos del santo ardor de la justicia, y uno á uno reiteraron sucesivamente su unánime y espontáneo decidido voto por la independencia del Pais, fijando en su virtud la determinacion siguiente –

Nos los Representantes de las Provincias Unidas en Sud-America, reunidos en Congreso General, invocando al Eterno que preside al Universo, en el nombre y por la autoridad de los Pueblos que representamos, protestando al Cielo, á las naciones y hombres todos del globo la justicia que regla nuestros votos, declaramos solemnemente a la faz de la tierra, que es voluntad unánime e indubitable de estas Provincias romper los violentos vinculos que las ligaban á los reyes de España, recuperar los derechos de que fueron despojadas, é investirse del alto caracter de una nacion libre e independiente del rey Fernando VII sus sucesores y metropoli. Quedan en consecuencia de hecho y de derecho con amplio poder para darse las formas que exija la justicia, e impere el cúmulo de sus actuales circunstancias. Todas y cada una de ellas así lo publican, declaran y ratifican, comprometiendose por nuestro medio al cumplimiento y sosten de esta su voluntad, bajo del seguro y garantia de sus vidas, haberes y fama. – Comuniquese á quienes correspondan para su publicacion, y en obsequio del respeto que se debe á las naciones, detallense en un manifiesto los grav...es fundamentos impulsivos de esta solemne declaracion. – Dado en la Sala de Sesiones, firmada de nuestra mano, sellada con el sello del Congreso y refrendada por nuestros Diputados Secretarios.





THE DECLARATION OF INDEPENDENCE SIGNED ON JULY 9, 1816, BY DELEGATES FROM THE UNITED PROVINCES OF THE RIO DE LA PLATA.

STATUE OF SAN MARTIN AT BUENOS AIRES.

This statue was first unveiled in 1862, but the base and pedestal were rebuilt and it was dedicated anew in 1910. José de San Martin, the great revolutionary hero of both Argentina and Chile, was born February 25, 1778.

and to all men of the globe the justice that dominates our votes; declare solemnly in the face of the world, that it is the unanimous and unquestioned will of these Provinces to break those unnatural bonds which have bound them to the kings of Spain, to recover the rights of which they have been despoiled, and to invest themselves with the high qualities of a nation free and independent of King Ferdinand VII, his successors, and the mother country. They are therefore, in fact and by right, with ample and full power to give themselves those forms that justice demands in response to the state of their present circumstances.

All and each of them so proclaim, declare, and ratify, engaging themselves by means of us to the accomplishment and support of this their will, under the security and guaranty of their lives, possessions, and reputation.

Let it be communicated to whomsoever, that it may be published, and out of respect due to the nations let be set out in a manifest the weighty reasons driving us to this solemn declaration.

Given in the hall of sessions, signed with our hand, sealed with the seal of the Congress and countersigned by our secretary deputies.—

Francisco Narciso de Laprida, deputy for San Juan, president; Mariano Poedo, deputy for Salta, vice president; Dr. Antonio Sáenz, deputy for Buenos Aires; Dr. José Darregueira, deputy for Buenos Aires; Father Cayetano José Rodriguez, deputy for Buenos Aires; Dr. Pedro Medrano, deputy for Buenos Aires; Dr. Manuel Antonio Acevedo, deputy for Catamarca; Dr. José Ignacio de Gorriti, deputy for Salta; Dr. José Andrés Pacheco de Melo, deputy for Chichas; Dr. Teodoro Sánchez de Bustamante, deputy for the city and territory of Jujuy; Eduardo Pérez Bulnes, deputy for Cordoba; Tomás Godoy Cruz, deputy for Mendoza; Dr. Pedro Miguel Araoz, deputy for the city of Tucuman; Dr. Esteban Agustin Gazón, deputy for the Province of Buenos Aires; Pedro Francisco de Uriarte, deputy for Santiago del Estero; Pedro León Gallo, deputy for Santiago del Estero; Pedro Ignacio Rivera, deputy for Mizque; Mariano Sánchez de Loria, deputy for Charcas; Dr. José Severo Malavia, deputy for Charcas; Dr. Pedro Ignacio de Castro Barros, deputy for la Rioja; Licenciado Jerónimo Salguero de Carrera y Cabrera, deputy for Cordoba; Dr. José Colombres, deputy for Catamarca, Dr. José Ignacio Thames, deputy for Tucuman; Father Justo de Santa Maria de Oro, deputy for San Juan; José Antonio Cabrera, deputy for Cordoba; Dr. Juan Agustin Maza, deputy for Mendoza; Dr. Tomás Man; uel de Anchorena, deputy for Buenos Aires; José Mariano Serrano-deputy for Charcas, secretary; Juan José Paso, deputy for Buenos Aires, secretary.

The building in which this famous Congress met and in which the declaration of independence was signed was a rather small but typically Spanish American house of that period. It is now preserved and called the Historic House. The arrangements for preserving the Historic House have been quite elaborate, and as can be seen from the pictures, it has been inclosed within a larger building. The declaration of independence was the great pulsating force which gave strength to the armies of San Martin in accomplishing the final overthrow of Spanish power in the Provinces of the Plata and in Chile.

BOLIVIAN TIN IN THE UNITED STATES

NOTWITHSTANDING the fact that the United States has been the best customer for South American raw products (except meat and grain), in the aggregate taking much more than Great Britain and twice as much as Germany, yet it is somewhat remarkable that of one South American raw product, tin, produced almost entirely in Bolivia, the United States has heretofore taken practically none. Since the United States has developed its industries to the point that, in comparison with other manufacturing countries, it can handle more hides, skins, rubber, tagua, copper, to mention only a few of its imports from South America, than these other countries, why is it that it can not also buy South American tin? Is it that the country does not use tin or produce its own supply? On the contrary it produces practically none and is at the same time the largest consumer of tin in the world. Why, then, does it not buy a part of its supplies from Bolivia? The whole Bolivian output would be insufficient for its needs. It buys copper, vanadium, tagua, rubber, and wool from Peru; rubber, coffee, and cacao from Brazil; hides, skins, and wool from Argentina, yet Bolivian tin, the principal export of the mountain Republic, is neglected.

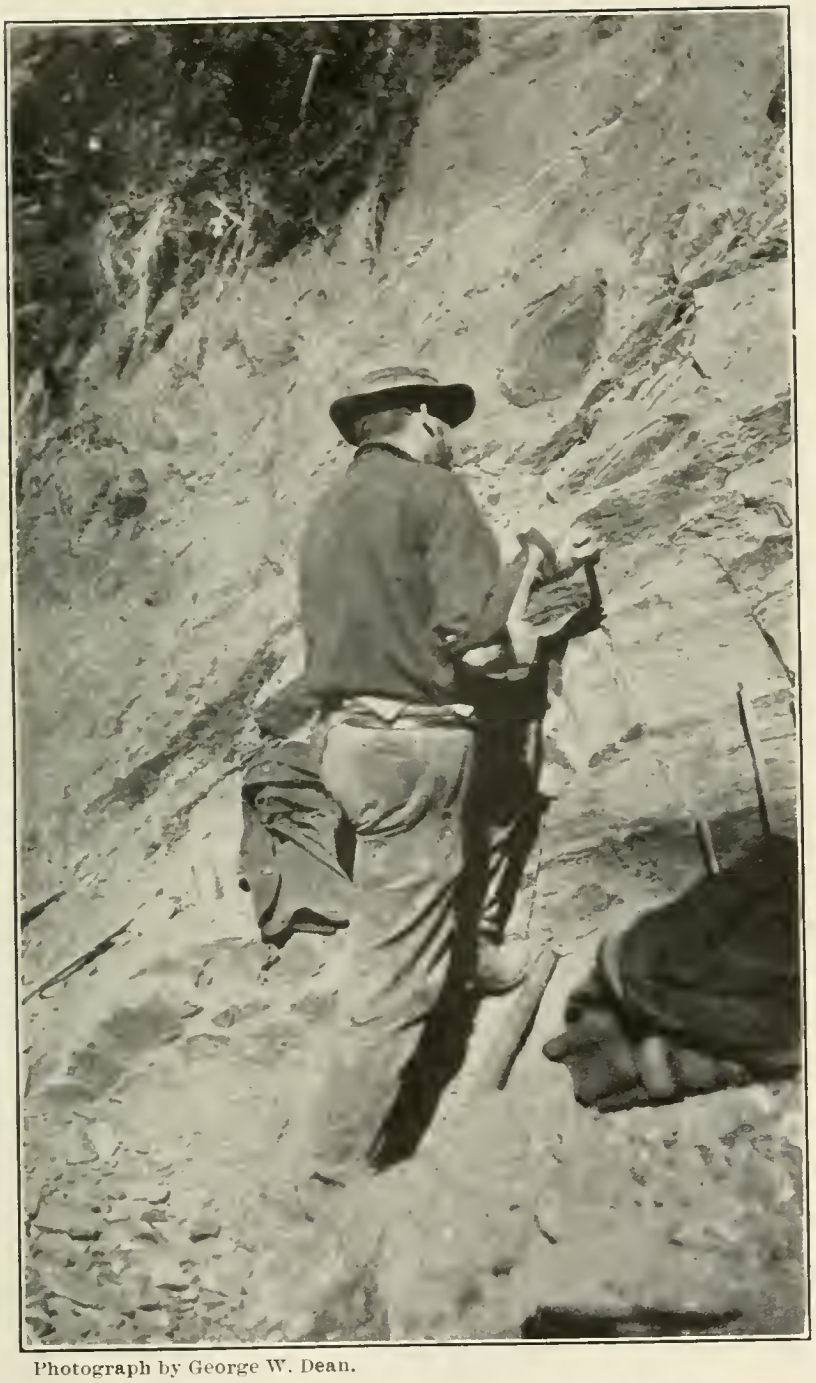
The answer, in part, is that Bolivia does not produce tin, but tin ore, not the metal but the mineral. In the chain between Bolivia and the United States there is lacking the intermediate links which represent smelting and refining. True, there is some smelting done in Bolivia, but the metal produced being unrefined is not of the quality that the United States demands.

The following table compiled by the New York Metal Exchange shows the tin supplies of the world for the last four years:

[In long tons of 2,240 lbs.]

	1912	1913	1914	1915
Shipments from Straits Settlement	59,000	62,500	63,000	66,500
Shipments from Australia	3,800	3,200	1,800	2,550
Shipments from Bolivia	21,200	24,850	18,750	23,000
Shipments from South Africa	3,100	3,200	5,000	5,500
Shipments from China to Europe and United States	3,800	2,450	1,900	3,000
Island of Banka, sales in Holland	16,000	14,800	9,300	14,350
Island of Billiton, sales in Java	2,200	2,200	1,250	1,900
Production in Cornwall, England	5,500	5,800	6,000	5,000
Totals	114,600	119,000	107,000	121,800

Tin has many uses, but these may be grouped under three general heads: First, as an unalloyed metal; second, as an alloy with copper, zinc, antimony, lead, and other metals; third, as a plating for iron,



Photograph by George W. Dean.

BEGINNING OF A NEW TUNNEL IN A TIN MINE.

In some instances the tin deposits are to a great extent superficial; in others they have been followed to depths of 1,000 feet. The width of the veins or lodes is variable, ranging from a few inches up to several feet. In some veins the ore is almost pure cassiterite; in others it occurs in the form of crystalline grains or nodules in a matrix of tenacious clay or in a ferruginous mass. These latter veins are often 10 feet or more in width, while the former do not ordinarily exceed 2 feet.

Photos by George W. Dean.

WORKERS IN THE TIN MINES OF BOLIVIA.

Upper: Group of native tin-mine workers. Center: Women sorting tin ore on the dumps. Sorting is the first process in concentrating the ores. The pure ore is picked by hand from the hard clay or ferruginous matrix and after being washed is ready for grinding. Lower: Stone quimbalates used by the natives for hand crushing or grinding tin ore. These stone crushers have been substituted by power mills in nearly all the tin mines of Bolivia.

steel, copper, and other more easily corroded metals. Under the first head tin is used in making certain pharmaceutical and scientific instruments and tin foil. Under the second it is used in the production of bronzes, gun and bell metal, pewter, the whole group of so-called white metals, and in fact its use as an alloy is almost unlimited. Tin enters into the production of a hundred or more industrial alloys, and its use in this direction is constantly spreading. It can be claimed for tin that in connection with copper it was the first metal used by man—the bronze age follows the stone age and antedates by centuries the iron age. The remarkable property which certain metals have, and among these tin is one of the most conspicuous, that when alloyed with another metal the compound possesses a quality of strength, hardness, malleability or resonancy superior to that of either of the metals entering into the compound is what in its first and in all subsequent uses gave value to the compound above any of its component metals. Tin and copper are both soft metals, not resonant and having but little strength. Bronze on the contrary is hard, resonant to the highest degree and with a breaking strength nearly equal to iron. Solder and pewter, compounds of tin and lead, are harder, have more strength and a higher melting point than either tin or lead. In the development of the tin alloy industries the United States has by no means taken the lead, and the use of the metal under the first and second grouping herein mentioned is, comparatively speaking, not large.

It is under the third grouping, tin as a plating, that the great bulk of tin imports into the United States finds its employment. Common tin plate, as every one knows, is iron or steel, ordinarily the latter, covered with a protecting coat of tin. Terneplate is that in which the coating is a tin and lead alloy. Terneplate is of little importance as a commercial industry compared with tin plate. The property which tin has of not tarnishing or rather of being in a high degree resistant to the decomposing action of air, water, and the common acids and alkalies is what gives value to its use as a protective coating for the easily corroded iron and steel. The strong and rigid steel protected by the tin furnishes an almost ideal material for the fabrication of all kinds of containers.

It is the development of the canning industry in the United States which has created the demand for containers made of tin plate and consequently for tin itself with which to make the tin plate.

The United States uses in the canning industry as containers as much tin plate as all the remainder of the world combined. As a user of tin in other lines of industry the United States does not occupy the leading place, not even in the use of tin plate except as containers for canned products. It is the humble tomato, salmon, peach, and beef can which accounts for the immense use of tin in the United States.

Photograph by William V. Alford

A BOLIVIAN ORE CARRIER.

The principal tin-consuming countries are the United States, Germany, France, Great Britain, and Austria-Hungary. According to figures presented by the Metallbank und Metallurgische Gesellschaft of Frankfort, a. M., and quoted in Commerce Reports, January 6, 1916, the actual tin consumption of these countries in metric tons of 2,204.6 pounds, after deducting exports, is as follows:

Countries.	1906	1907	1908	1909	1910	1911	1912	1913
	Metric tons.	*Metric tons.*	*Metric tons.*	*Metric tons.*	*Metric tons.*	*Metric tons.*	*Metric tons.*	*Metric tons.*
United States	45,300	41,400	34,400	44,700	51,800	46,400	48,900	43,100
Germany	14,700	13,000	15,100	14,400	15,100	15,400	16,900	16,000
France	6,800	6,600	7,600	7,500	7,600	7,800	7,900	8,800
Great Britain	4,700	5,000	6,500	2,700	2,700	5,200	5,200	7,300
Austria-Hungary	3,600	4,000	4,000	4,100	4,200	4,000	3,700	3,000

According to the Mining World, Chicago, February 5, 1916, the importation of tin into the United States, in 1914, was 41,700 tons, and in 1915 47,835 tons.

The imports for 1915 were received from—

	Tons.
Straits, by direct steamers	26,020
China, by direct steamers	1,005
United Kingdom	17,524
Batavia	3,123
European Continent	95
South America	68
Total	47,835

The compilation made by the New York Metal Exchange differs from the above somewhat as follows:

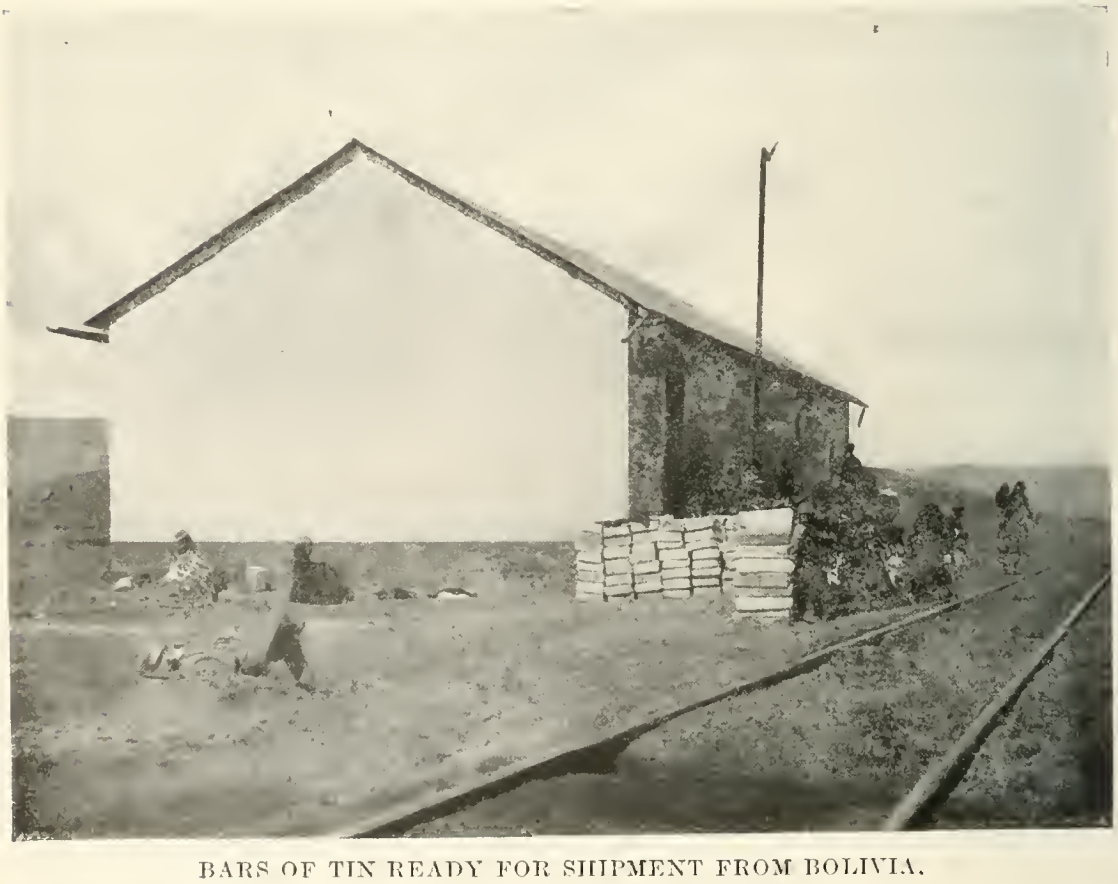
Straits	42,071
Australia	10
Banka and Billiton	3,253
English	3,430
Chinese	1,420
Sundries	188
Total tons (of 2,240 lbs.)	50,372

Between the ore in the mine and the finished tomato can there are a number of metallurgical, industrial, and economic processes and conditions which must be understood in order to answer the question why Bolivian tin has heretofore not been used to any considerable extent by the United States in the manufacture of tin cans.

First, what is the industrial and economic position of the United States in the production of tin plate? It is only a few years ago when nearly all the tin plate used was imported from Europe, principally from Great Britain. The development of the iron and steel industry has entirely changed this condition, so that at present but little or no

Photograph by George W. Dean.

A TIN MINE IN THE ORURO DISTRICT OF BOLIVIA.



BARS OF TIN READY FOR SHIPMENT FROM BOLIVIA.

Photo by I. F. Scheeler.

BAGS OF TIN ORE AWAITING SHIPMENT.

In the vicinity of Potosi are found some of the richest of Bolivia's famous tin mines, whose product is shipped out in bags like those shown in the above illustration.

tin plate is imported. This country now makes all its plates and imports the tin with which to cover them. But why has not the United States, the largest user of tin in the world, consuming as much as Great Britain, France, Germany, Austria, and Belgium combined, imported the ore and done its own smelting? More in particular, why has it not imported Bolivian ore? To answer the second question first, because tin produced from Bolivian ore by the established methods of smelting, whether in Bolivia or in Europe, contains impurities which render it much less suitable for tin plating than tin produced from the ores of the Straits. Bolivian tin may be just as good as Straits tin for other uses, but for tin plating, the principal use of tin in the United States, it is not so good.

A chemically pure metal is not often demanded in the arts and industries and but few metals are ever reduced to the chemically pure state. Sometimes it happens, however, that a certain kind of impurity, even though occurring in infinitesimal quantities, renders a metal unsuited for a certain purpose. Other impurities may be tolerated, but this impurity can not be. It is so with Bolivian tin. One of the impurities which makes it unsuitable for plating is iron, and from this impurity the Straits tin is free. Ferruginous tin, even though the iron content be exceedingly small, will not readily adhere to steel and iron plates.

It is plain to see why, under conditions heretofore existing, Bolivian tin has found but little market in the United States. Why tin ore of no kind—except in inconsiderable quantities—has been smelted here is simply because the United States, being forced by the metallurgical condition to use East Indian tin principally, was met by a discriminating export tariff duty which prevented its bringing the ore and compelled it to buy the metal. A number of years ago a tin smelter was erected in Bayonne, N. J., for the treatment of Straits ore, but before the smelter could get into operation a protective export duty was placed by the Federated Malay States on these ores and tin smelting in the United States never even got a start.

The United States could not use the Bolivian ores and it could not get the East Indian ores, and that is the whole story in a nutshell.

But the arts progress. Recent advances have been made in the industry of tin smelting and refining. Electricity, which has revolutionized so many other industries, is revolutionizing tin refining. Electrolytic tin is almost chemically pure tin. Analysis show 99.98 per cent pure, produced from metal only 93 per cent tin. Electrolytic tin is pronounced by tin-plate manufacturers as equal in every respect to the best Straits tin. Finally, Bolivian tin can be refined by the electrolytic process. Herein have been forged, ready for the placing, the links until now wanting in the chain between Bolivia and the United States.

Photo by I. F. Scheeler.

TIN REDUCING WORKS AT UNCIA, BOLIVIA.

The American Smelting & Refining Co. has recently completed at Perth Amboy, N. J., a plant for the smelting of tin ores and concentrates and the electrolitic refining of tin. In order that the conditions that arose when the Bayonne smelter was built, through imposing discriminating export duties by the ore-producing country, might not again occur, the American capitalists interested in tin smelting entered into direct negotiations with the Bolivian Government. The substance and progress of these negotiations, according to a writer in Commerce Reports, January 6, 1916, was:

"In a communication addressed by the vice president of the American Smelting & Refining Co. to the Bolivian minister at Washington, the question was raised as to whether the existing commercial treaty between the United States and Bolivia was sufficient to protect the United States against possible future discrimination on the part of Bolivia in regard to export duties on tin ores.

"Upon careful examination of the commercial treaties concluded by Bolivia with the United States and certain foreign countries, such as Great Britain, Germany, and Belgium, it was found that, while the commercial treaty with the United States was sufficient to guarantee most-favored-nation treatment, there was a possibility that in the case of certain changes in the treaty relations of Bolivia with foreign countries some tariff concessions affecting export duties might be withheld from the United States on account of the conditional form of the most-favored-nation clause in the treaty of May 13, 1858.

"It was accordingly decided to bring about an exchange of notes with the Government of Bolivia, so as to prevent future discrimination against the United States in regard to the export duty on tin ores, and a letter to that effect was addressed by the Secretary of Commerce to the Secretary of State under date of February 16, 1915.

"On July 8, 1915, the department was informed by the Secretary of State that the Bolivian minister of foreign affairs had given a signed note of assurance against any discrimination in the matter of export duties on tin or other metals against the United States. Under date of November 4, 1915, the Department of State transmitted the note from the Bolivian minister of foreign affairs, to the effect that the Government of Bolivia will observe, in reference to the United States, the dispositions of the treaty of friendship, commerce, and navigation, of May 13, 1858, now in force, and will not adopt different tariffs for exports from Bolivia in accordance with their destination."

Contracts have been entered into by the American smelters and the Bolivian producers for a sufficient supply of ore. It is proposed to begin with shipments of about 750 tons a month, gradually to be increased to 1,200 tons.

Tin has been found and mined to a limited degree in parts of North and South America other than Bolivia. The principal deposits in

Photo by I. F. Scheeler.

MACHINERY USED IN TIN-REDUCTION WORKS IN BOLIVIA.

North America so far known are in Alaska at the extreme western point known as the Seward Peninsula, where Asia and America approach nearest each other. The ore was first discovered in this locality as a heavy and objectionable constituent accumulating in the sluice boxes of the placer gold miners. It was some time before the substance was recognized as cassiterite, but once known prospecting for tin began and the result has been the discovery of a considerable area of tin deposits. Both lode and placer ore have been found, but the known placer deposits are not extensive enough to afford much foundation for the belief that Alaska will be a serious contender for place as a producer of placer tin ore. As to the lode deposits, while not enough is yet known to prognosticate with any degree of certainty the future of Alaska tin, yet the prospect is more encouraging.

In the United States tin ore has been found in North and South Carolina, South Dakota, Washington, and Texas. In South Dakota in the northern Black Hills considerable mining work has been done and the outlook for tin production is favorable. The same can be said of Texas, where much development work has been done both in lode and placer tin deposits. The tin deposits of Washington are near the city of Spokane. Tin was first recognized in the southern Appalachians, on the line between North and South Carolina, about 1875. The first discovery was of placer deposits, but subsequently lode tin was discovered. The placers of this region are of inconsiderable importance, but the lode tin deposits give every indication of being valuable and of considerable extent. These deposits are not vein deposits, but dikes of an igneous rock, pegmatite, which have solidified from an originally molten state. The placer deposits are derived from the breaking down of these dikes. The tin-bearing mineral is a variable constituent of the pegmatite, much of which carries no tin, while other portions contain a larger proportion of cassiterite and some masses are made up almost wholly of the tin mineral.

Tin has been found in Mexico and mined to a small extent. In Colombia there are known deposits which may prove of great value. In Peru there has been but little development, but a Government commission sent out in 1907 makes a most favorable report as to the tin prospects in the Provinces of Huancane and Chucuito of the Department of Puno, adjoining Bolivia.

Tin ore has been located at several places in the Argentine Republic. At Tinogasta there are tin deposits which may prove of considerable value. In the Province of La Rioja, north of Chilecito, it is claimed that very valuable outcroppings have been discovered. In La Rioja, close to the Catamarca frontier, in the Cerro Mazan and Cerro Minas, the ore is being mined with most satisfactory results, although as yet

Photo by I. F. Scheeler.

CARTING TIN ORES TO RAILWAY STATION, UNCIA, BOLIVIA.

in comparatively small quantities. The principal work done is in the Mazin ridge on the Descubridora vein. The cassiterite is in fine crystals, and while the run of the rough ore is not rich yet on account of its being easily broken down and assorted the mining promises rich results.

But it is in Bolivia that the great tin deposits have been found and worked, and Bolivia, so far, is the only locality of the new world whence tin in large commercial quantities is exported.

Before the coming of the Spanish conquistadores the natives of Peru and Bolivia, in the vicinity of Lake Titicaca, made use of tin as an alloy with copper to make bronze. Whether they knew tin as a distinct metal is a question, although the evidence points to the fact that they did. They no doubt found that the soft silver-colored metal in its pure state was unsuited for making utensils or weapons and but little use in making ornaments, owing to its want of wearing qualities. But they did know that when melted with copper it added strength, hardness, and fire-resisting qualities to the copper, the great deposits of which in the Corocoro region were known and worked by them. Numerous articles of bronze from the ancient Inca civilization have been found in Peru and Bolivia, but the location of the ancient tin mines is very conjectural. Father Alonso de Barba, curate of Potosi, in a work published in 1640, states that the deposits of Carabuco were worked during the Inca times. It is a curious fact that of the two native race stocks of the southern half of the Inca territory—the Quichuas and Aymaras—only the former seem to have known or used tin, since it is only in the coast valleys and other locations inhabited by the Quichua race that bronze objects are found. In the country of the Aymará race no such objects are ever found, yet it is here that the known tin deposits of the present time are located.

The chain of the Andes coming down from Peru divides into two great branches, between which lies the great plateau of Bolivia, over 11,000 feet high. The eastern range, the Cordillera Real, is the higher of the two, and in its northern half contains the great mountains of Sorata, Illimani, Huayna Potosi, and others, and it is in the eastern range south of these great mountains that the tin deposits are found.

Most of the tin mines of Bolivia are yet in virgin ground—that is, they are new workings. These mines are located in four districts—La Paz in the north, Oruro in the center, Chorolque in the south, and Potosi in the east. The districts of Oruro and Chorolque are the largest producers. The city of Oruro is the center of the tin-mining industry, to which contribute not only the mines of the district but also those of Chorolque and others of the north and south. Many of the mines of this neighborhood were originally silver mines and yet produce silver in considerable quantities. The Socavón de la Virgen, San José, Huanuni, Negro Pabellón, Morococala, and Antiquera.

Photo by L. F. Scheeler.

BAGGING TIN ORES FOR EXPORT, POTOSI, BOLIVIA.

mines, now rich tin mines, were in the old Spanish colonial days rich silver mines, tin being held of such little value that it was rarely extracted. The San José mine is about 2 miles from Oruro. It is both a silver and a tin mine, but the tin is of the greater importance. The Antiquera mines are near Poopo, on the Antofagasta and Oruro Railway. Huanuni is said to contain the richest tin mines in the Department of Oruro. These are located about 15 miles from the station of Machacamaca of the Antofagasta Railway. The Cerro de Pozacani, in which these mines are situated, rises to the height of about 10,000 feet, a rough cone in shape. It is laced by innumerable lodes and veins, some of which are worked on a large scale. The Cataricagua vein produced in 1905 ore equivalent to 1,192 metric tons. The vein runs from 2 to 8 feet in width and is from 20 to 50 per cent cassiterite. The Bolivian ores are ground and concentrated for the pure cassiterite. In this form as a sand, and called tin barilla, it is exported. A very considerable part of the valuable oxide is lost in treatment.

The mines of Negro Pabellón, Morococala, and Vilacollo are about 10 miles south of Huanuni, near Paria. The principal lode of Negro Pabellón is about 3 feet in width and is crossed by several smaller veins, with here and there rich pockets of cassiterite. The barilla obtained from this ore is exceptionally rich, containing more than 70 per cent metallic tin. Concentrated Bolivian ores as a rule run about 60 per cent, or a little less, metallic tin. In the Morococala mine the vein is from 12 to 15 feet thick, of a good grade of ore.

Berenguela, in the Province of Cochabamba, has an exceptionally high grade of ore. In colonial days Berenguela was a rich silver mine. The two ores are in distinct veins.

The tin mines of the northern field of Bolivia are in two groups—Huayna-Potosi and Milluni, north of La Paz, and the Inquisivi fields, on the extreme eastern edge of the Great Plateau. Included in the Inquisivi fields are the mines of Quimsa Cruces, Araca, and Santa Vela Cruz.

The first area is at the southeast end of Lake Titicaca, in the mountains some 13,000 feet above sea level. During colonial days these mines were silver mines, but silver now in this locality is but little more than a tradition, for the only mining now carried on is tin mining. There are a great number of small mining properties in this locality, but the principal output comes from the company which owns the Carmen mine of the Huayna-Potosi and the Milluni mine.

The Quimsa Cruz or Tres Cruces district of Inquisivi is one of the most promising of the Bolivian fields. It is in the heart of the Cordillera Real, which here rises over 17,000 feet above sea level. These fields are about equidistant from La Paz and Oruro, but much more accessible to the latter. The principal tin property in the district is the group of Monte Blanco mines. These mines are on the western

Courtesy of the *Albatross*.

FOURTEEN THOUSAND FEET ABOVE THE SEA IN BOLIVIA.

The above illustration shows a section of the road from Potosi to Sucre, Bolivia, over which motor-bus service is maintained, subsidized by the National Government. The distance between these two points is about 150 miles and the trip is made in approximately 10 hours. Four six-cylinder motors of a United States make are giving excellent service, despite the rigorous roads and high altitudes encountered. At one point the autos cross the Andes at an elevation of 17,000 feet. The pictures reveal something of the rugged grandeur of the high mountains which traverse the country in different ranges.

slope of the Cerro Atarani. The quarters and mine office of the company are at an elevation of 14,800 feet and some of the lodes mined are 1,500 feet higher up the mountain slope. Among these lodes is the Santa Fé, which outcrops for about 1,000 feet, with an average width of from 6 to 9 feet. The ore runs about 12 per cent pure cassiterite. In pockets the mineral is found nearly pure. In the neighborhood of the Monte Blanco mines are the mines of Barosso Cota, Santa Rosa, La Florencia, Copacabanca, and others.

About 20 miles south of Monte Blanco is the Santa Vela Cruz field. The most important property in this field is that of the Concordia Tin Co. The location is not quite so high as Monte Blanco. Here the best mining methods are being adopted and the property will be without doubt a large producer, although not yet fully developed.

South of Santa Vela Cruz are the fields of Sayaquiri, a new field in which some prospecting has been done which promises large results, and Colquiri, formerly a silver field, but now developing into a tin-producing district.

The northern tin fields of Bolivia have in the past suffered much for lack of good transportation. This condition is being greatly improved with the recent railroad development in the country.

AERONAUTIC FEDERATION OF THE WESTERN HEMISPHERE

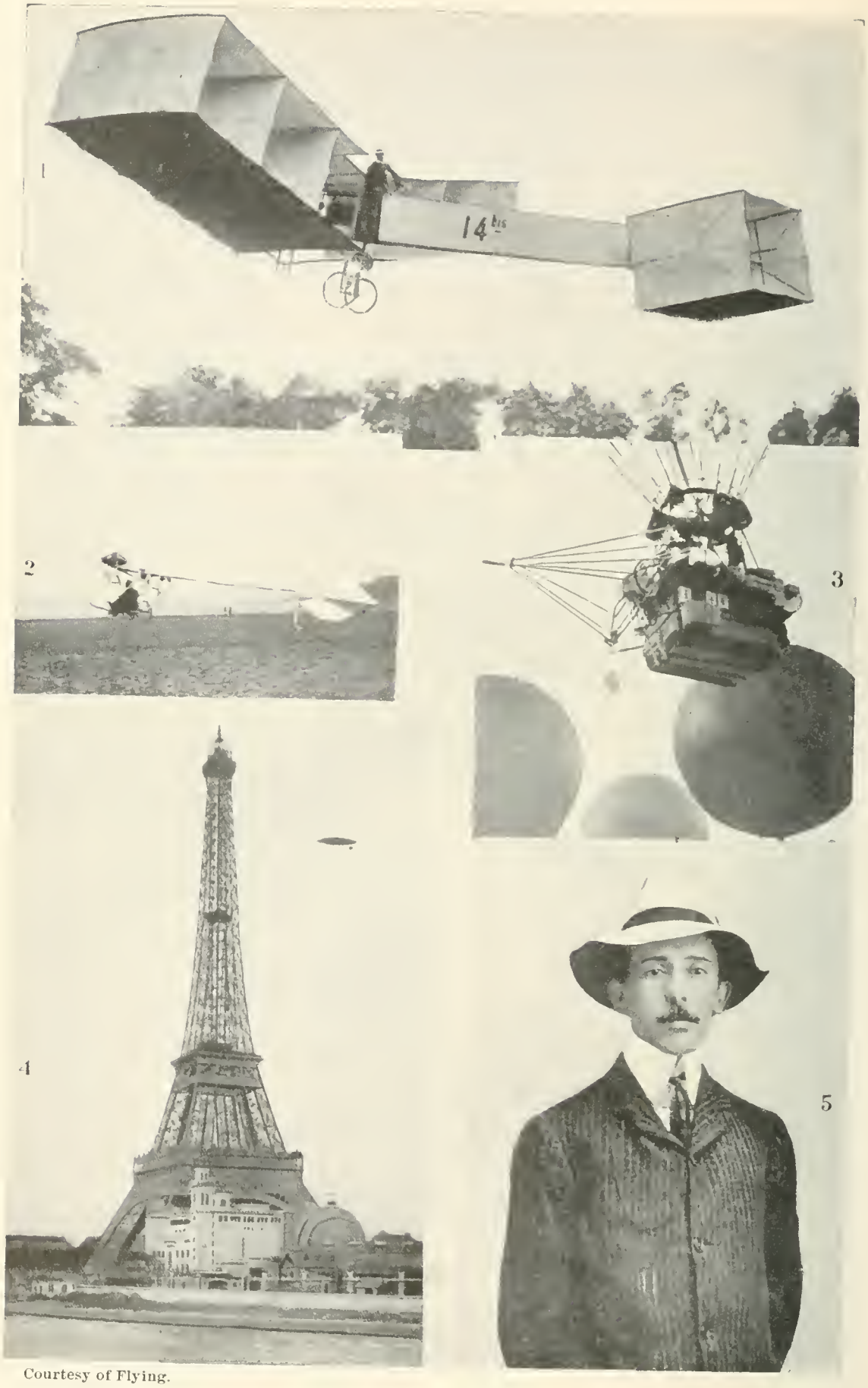
THE Aero Club of America, of which Mr. Alan R. Hawley is president, about a year ago conceived the idea of organizing into closer association all the aeronautic clubs of the Western Hemisphere, and proposed as a name for the larger association the Aeronautic Federation of the Western Hemisphere.

It was the intention of the Aero Club of America to offer as a candidate for the presidency of the federation the name of the distinguished Brazilian aeronaut, Mr. Alberto Santos-Dumont. In furtherance of this plan the Aero Club in January, 1915, wrote to Mr. Santos-Dumont inviting him to come to the United States and head a Pan American committee formed for the purpose of organizing the federation. Upon Mr. Santos-Dumont's arrival, the work of organization was immediately entered upon, and it was agreed that the

Photo by Harris-Ewing.

ALBERTO SANTOS-DUMONT.

Senhor Santos-Dumont is at present visiting many cities of South America in the interest of the Pan American Aeronautic Conference. He was born in Sao Paulo, Brazil, on July 20, 1873. From 1900 to 1906 he demonstrated to Europe the possibility of conquering the air with the dirigible balloon as well as with the aeroplane. He spent in aeronautics alone over $50,000 a year for 12 years in experimentation. While in Paris in 1901 he won a prize of 250,000 francs. He was made Chevalier of the French Legion of Honor in 1904, and in 1909 received the Officer's Cross.



Courtesy of Flying.

EARLY ACHIEVEMENTS IN AERONAUTICS BY SENHOR ALBERTO SANTOS-DUMONT.

(1) Alberto Santos-Dumont making his first public flight. (2) Santos-Dumont's first *Demoiselle*, constructed in 1907. This was equipped with a 32-horsepower motor, designed by the aviator. (3) In 1905, Santos-Dumont representing the Aero Club of America in the Gordon Bennett balloon race. On this occasion he experimented with an apparatus intended to do in another way the work done by the ballast. This device is shown attached to the basket of the balloon on the upper part of the picture. (4) Santos-Dumont circling the Eiffel Tower, October 19, 1901. This was the sixth of the nine dirigibles which he built. (5) Photograph of Santos-Dumont, taken in 1901, when he was experimenting with dirigibles.

names of Mr. Santos-Dumont as president and of Mr. Cortlandt F. Bishop as secretary general of the federation should be proposed. Mr. Bishop is the vice president of the Aero Club of America and also vice president of the Federation Aeronautique Internationale.

While the committee having the matter in charge was busy with the details and was about to send invitations to the Aero Club Argentino, Aero Club of Brazil, Aero Club of Chile, and other clubs in Central and South America, an invitation was received from the Chilean club inviting the Aero Club of America to a conference in Chile. This latter invitation was immediately accepted, and Messrs. Santos-Dumont and Bishop were appointed as delegates to attend the Chilean conference.

Among the articles proposed by the organizing committee of the Aero Club of America for incorporation in the constitution of the Aeronautic Federation of the Western Hemisphere are the following, which will be presented and discussed at the meeting in Chile:

Under the name Aeronautic Federation of the Western Hemisphere is established a union of the clubs and societies that control aeronautics in their respective countries in all the nations of the American Continent.

Aeronautics will be directly represented in this federation by the recognized club or society of each country.

The federation is charged with the regulation of aeronautics on the American Continent.

The federation is directed and administered by a board composed of a president, of 10 vice presidents, of a secretary general, of a recording secretary, of a treasurer, and of 5 delegates from each country. The secretary general and the treasurer must reside at the seat of the federation, which it is proposed to establish in New York. Every national club or society will nominate 5 delegates, who shall be designated as sportive, scientific, juridical, military, and commercial, respectively.

A conference, composed of delegates from affiliated clubs or societies, will be held each year, in different countries if possible.

Each country represented at the conference shall be entitled, according to the degree of its aeronautic activity, to a certain number of votes, which shall be fixed for the first time at the moment of the country's definite admission.

Votes will be assigned to each country in proportion to the total number of its certificated pilots, this number having been determined on the 31st of December of the year just passed.

The allotment of votes is subject to revision each year at the conference.

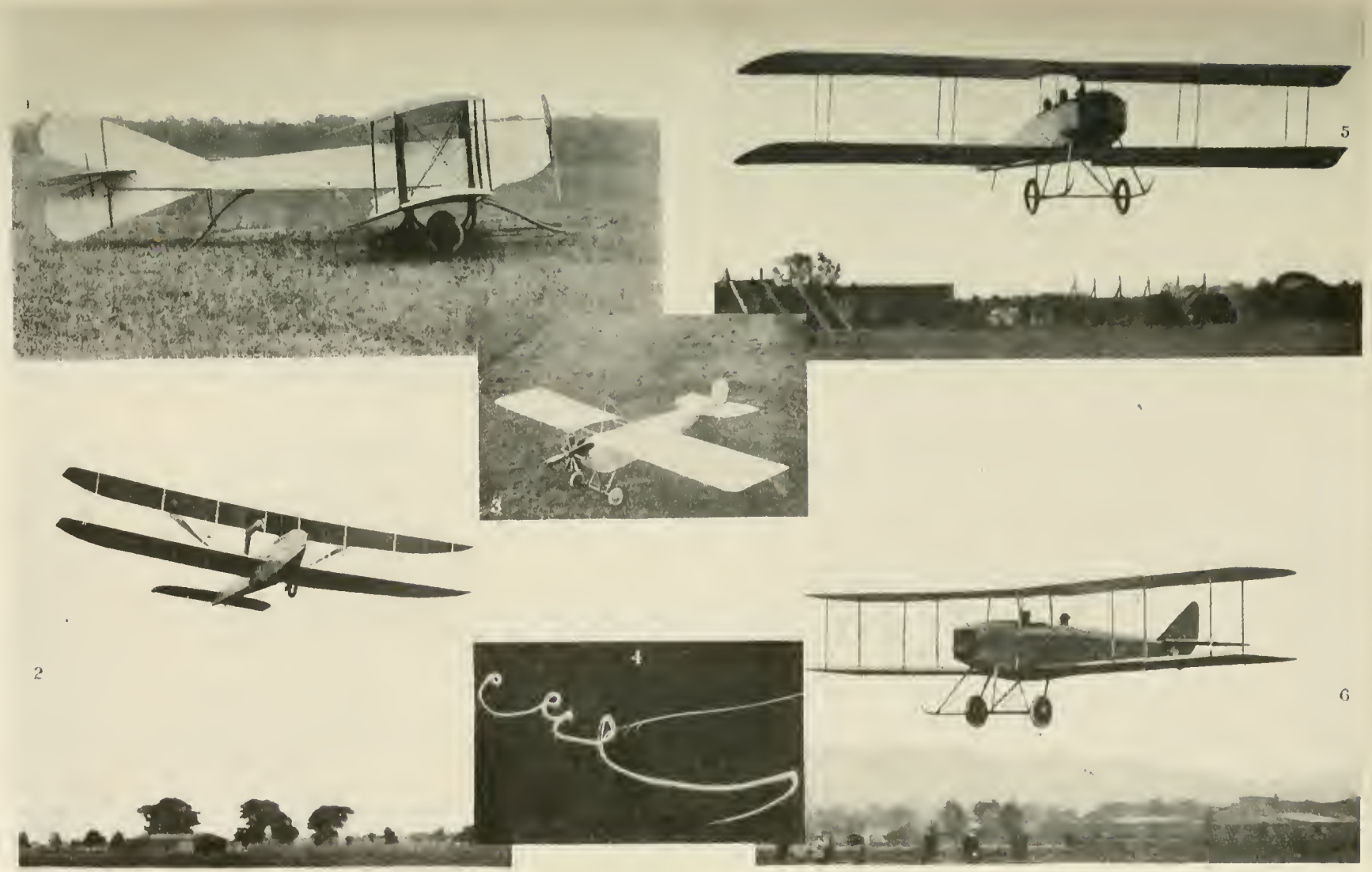
For sanctions, pilot certificates, and rules for competitions and records, the federation shall adopt the rules and regulations of the Federation Aeronautique Internationale.

The Aero Club of America has offered a ten-thousand-dollar Pan American aviation trophy to be competed for by representatives of the different countries of the Americas, the first contest to take place at Rio de Janeiro. The federation, as it has been discussed in the organization committee of the Aero Club of America, is designed to provide for complete cooperation in every respect between the nations of the Western Hemisphere, and it is proposed that the

Courtesy of Flying.

THE CURTISS MARINE FLYING TROPHY.

This trophy was presented by Mr. Glenn H. Curtiss, one of the pioneers in the manufacture and operation of hydroplanes, and is open for competition between members of the aero clubs of the United States. It is of silver and stands 3 feet in height. The cost to the donor was $5,000. A flying boat of the 12-passenger or trans-Atlantic type is shown in flight over the globe, supported on a base representing the sea. Neptune, the ruler of the waves, who has controlled all marine craft throughout the ages (the Viking boats of a thousand years ago, Columbus' caravel, the Santa Maria, are shown in the distance) and who still has control over the latest marine craft (some of the representative craft; the yacht cup winner, a liner, a dreadnaught, and a submarine are shown enmeshed in the net which he holds in his left hand) rises from the sea and reaches out for the flying boat which is flying over the globe. But this craft rises beyond his reach and he stands amazed, his hand uplifted in an attempt to grasp the fleeting air craft. Boreas, the ruler of the winds, blows drafts of air and also reaches up for the flying boat, but his efforts are ineffective; the air craft is undisturbed by them. Mr. Curtiss has also donated an additional $5,000 to supply $1,000 cash prizes to winners for five consecutive years.



Courtesy of Flying.

POPULAR TYPES OF AEROPLANES IN USE IN THE UNITED STATES.

The original type of aeroplane in the United States was the biplane and it still holds its popularity, although there are a few companies manufacturing monoplanes. The Postmaster General of the United States proposes to establish aerial mail service in the Cape Cod country of Massachusetts, and in Alaska. In the former location 14 trips a week will be made over a circuit of 56 miles, carrying a load of 3,000 pounds of mail matter. In Alaska, 7 routes will be established, ranging from 410 miles to 381. Schools for instructing aviators have been opened in many parts of the United States, the complete course costing $250. Photographs 1, 2, 3, 5, and 6 show the various types of machines used for starting and lighting on land. Illustration 4 is a night photograph of a flight made by a young lady pupil of a flying school in California, in which she attempted to sketch on the sky by the evolutions of the biplane the letters "CAL," an abbreviation of the word "California." As the aeroplane loops and glides an illuminate burning powder is liberated from the machine which following its course takes the form of the letters to be reproduced.

whole field of aeronautics be covered. To this end scientific, juridical, military, and commercial representation is to be secured in the important committee of the federation.

Mr. Santos-Dumont, in his speech before the Second Pan American Scientific Congress in Washington, discussing the military functions of aeroplanes, says:

All European countries are old enemies. Here in the New World we should all be friends. We should be able, in case of trouble, to intimidate any European power contemplating war against any one of us, not by guns—of which we have so few—but by the strength of our union. In case of war with any European power, neither the United States nor the great South American countries could, under present conditions, adequately protect their extensive coasts. It would be impossible to patrol the shore of Brazil and Argentina with a seagoing fleet. Only a fleet of great aeroplanes flying 200 kilometers an hour could patrol these long coasts.

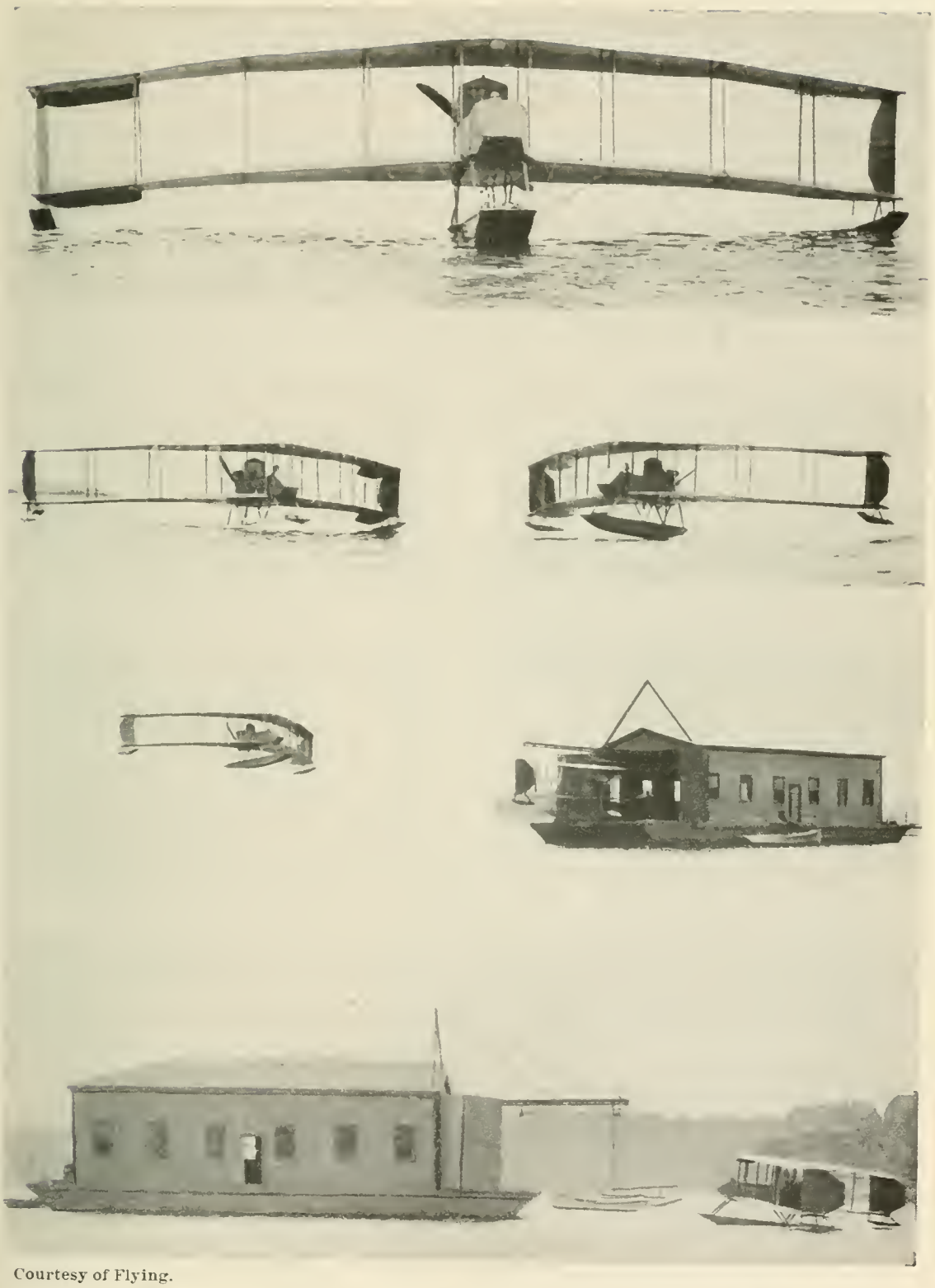
Scouting aeroplanes could detect the approach of hostile fleets and warn their own battleships for action. One of the most powerful means of protection would be in such squadrons of aeroplanes, owned by the Governments of the United States and the various South American countries. In case of war these aeroplane fleets would enable the United States and the various South American countries to operate as allies in protecting their coast lines. Am I speaking of an impossibility?

Remember that 10 years ago, when I came to the United States with my 20-horsepower airship, no one would talk seriously about aerial navigation. We now see what the aeroplane does in Europe in taking observations, directing battles and the movements of troops, in attacking the enemy, and in the protection of coasts.

In speaking of the more commercial aspects of the aeroplane, Mr. Santos-Dumont further says:

I have spoken of the difficulties that have retarded a development of commerce, better facilities in transportation and communication, and the fostering of friendly relations. I believe these difficulties are about to be overcome. I feel certain that the present obstacles in time and distance will be surmounted. The isolated cities of South America will be brought into touch with the world of the day. Separated countries will meet despite the barriers of mountains, rivers, and forests. The United States and the countries of South America will be brought together as closely as are England and France. The distance from New York to Buenos Aires, which is now over 20 days by steamship, will be abbreviated to a trip of a few days. With time and distance annihilated, the commercial relations so long deferred will spontaneously develop. We shall have facilities for prompt communication. We shall get into closer contact. We shall become stronger in the bonds of understanding and friendship.

All this, gentlemen, will, I believe, be effected by the aeroplane. I do not think many years will pass before there will be established aeroplane services between the great cities of the United States and the capitals of the South American countries. With a Government-owned aeroplane service, communication between the two continents will be cut from 20 days to 2 or 3 days. The transportation of passengers between New York and the remote points of South America is not impossible. I believe the modern improved aeroplane will solve the problems with which we have struggled for years. I believe the aeroplane will knit the various States of the continent into an integrally united, cooperating, and friendly combination, allied for their own well-being in trade and commerce, as well as for strength in times of possible war.



Courtesy of Flying.

A TYPE OF FLYING BOAT POPULAR IN THE UNITED STATES.

Great progress has been made in the United States in the development of flying boats. One of the companies manufacturing this type of seaplane is marketing a giant of the type whose spread of wings is 130 feet, carrying 4 motors with a total capacity of 960 horsepower, which give a speed of 100 miles per hour. The illustrations on this page show a smaller type of seaplane, owned by Mr. Vincent Astor, of New York. The upper picture shows the flying boat, which has a speed of 65 miles per hour, and a lifting capacity of 2,400 pounds. The other pictures show the seaplane starting for the flight, rising and leaving the water, in full flight, and placing the flying boat in the floating hangar after the flight. The lowest picture is a side view of the hangar, with the seaplane ready to be picked up and placed inside.

Mr. Alan R. Hawley, president of the Aero Club of America, indorsing the views of Mr. Santos-Dumont, says:

I believe with Mr. Santos-Dumont that these aeroplanes of to-day, which already make it possible to carry a dozen passengers and a ton of useful load at a speed of 85 miles per hour, can solve most difficult problems of transportation, and that if applied for this purpose as well as for sport in and between the nations of the Western Hemisphere they will become one of the most effective factors in bringing these nations into closer and most friendly alliance. In the words of Mr. Santos-Dumont, "the aeroplane will knit the States of the Western Hemisphere into an integrally united, cooperating, and friendly combination, allied for their well-being in sport, trade and commerce, as well as for strength in times of possible war."

There are thousands of places not yet connected by railways or roads right in the United States, and there must be tens of thousands in the Western Hemisphere—where aeroplanes could transport mail and "express merchandise" at a fraction of the time required at the present time.

Mr. John Barrett, Director General of the Pan American Union, says:

The aeroplane may yet become the most powerful physical influence to bind the American nations together and to make the Monroe doctrine a Pan American principle.

There is no other portion of the world where the aeroplane in its ultimate efficiency can accomplish more for communication than in many sections of Latin America. Such large portions of Central and South America are characterized by precipitous mountain ranges and vast jungle areas that long years must elapse before railroad construction can master the difficulties that these physical conditions present. During the period while scientists, engineers, and constructors are harnessing the water powers of the mountains and conquering the jungles for railway lines that will bring all these regions into close contact with the centers of population the aeroplane builder and the aeronaut must thread lines and routes through the skies that, though invisible, will bind the portions of America with such intimate and useful ties and means of communication that there will be no possible disruption or separation of the nations and their peoples included in Pan America and which stand for Pan Americanism.

To these views may be added those of Mr. Henry A. Wise Wood, one of the most distinguished engineers in the United States and president of the American Society of Aeronautic Engineers:

A few years ago they smiled at the dirigible, and it is shaking the world's imperial city; they laughed at the aeroplane, and it is directing the armies of Europe. They deride the overseas aerial liner, but I declare—not as a dreamer speaking in rhapsody but as a cold and calculating engineer—that the day is at hand when the building of such a vessel may be begun, and is not far distant ere the liner shall, at established intervals of time, set forth for every capital. Knowing neither land nor sea, nor reef nor ice, nor coast nor boundary, these winged, swift, and ghostly argosies shall make of every town an aerial port, of every hamlet a haven of safety on the coast of that vast ocean of which its earliest navigator sits amongst you here. Then shall there be realized the dream that has led us on, and there be drawn into a single community possessed of a common consciousness the national families of all the earth.

SIR CLEMENTS ROBERT MARKHAM[1]

SIR Clements Markham is dead. He died January 30, 1916, as the result of severe burns and shock received the night before, when his home in the suburbs of London was destroyed by fire. The announcement of his death was cabled to perhaps every civilized country in the world, for in all such countries his name and works were known. As traveler, explorer, and geographer his activities had extended from the Arctic Zone to the tropical countries of South America, from the remote regions of Abyssinia in eastern Africa to the interior mountain fastnesses of India and through the little-known byways of western Asia. Few men, indeed, have given so much toward the advancement of human knowledge of the world in regard to its unexploited sections as has Sir Clements, and fewer still have had the tireless energy and inspiring genius to disseminate this knowledge by means of published works so widely read as those produced by his prolific pen.

SIR CLEMENTS R. MARKHAM, K. C. B.; F. R. S.; F. R. G. S.; D. Sc.

Clements Robert Markham, traveler, geographer, historian, archaeologist, was born at Stillingfleet, near York, England, July 20, 1830; died January 30, 1916, from shock and severe burns received when his home in the suburbs of London was destroyed by fire. The accompanying biographiacl sketch is but a very incomplete outline of his life and works, a small tribute to a generous, kindly friend of all humanity, whose death marks the passing of another of the world's benefactors.

Of all the sections of the world, however, that owe a debt of gratitude to this remarkable and lovable man of science none is more beholden to him than the Republic of Peru—his favorite "land of the Incas." Other countries and other climes may have occasionally attracted him for a brief season, but ever he returned in his thoughts and in his writings to the land he had learned to love in his early youth. Peru was the subject of his second earliest work; time

[1] By Edward Albes, of Pan American Union staff.

and again he returned to it as a theme for his pen, and finally one of his latest and most delightful books, The Incas of Peru, was written and published after he was in his eightieth year. At last, as though loath to quit the pleasant scenes of his former interests, he wrote and published The Conquest of New Granada, after having reached the ripe age of 82, a remarkable instance of the preservation of all the enthusiasm and fervor of youth in the historical work of an octogenarian. In view of the fact, therefore, that so many of his works were devoted to the diffusion of knowledge in regard to some of the Latin American countries, their geography, history, resources, and progress, and inasmuch as he held an acknowledged position as one of the leading authorities among Americanists, it is but fitting that the BULLETIN should pay him the small tribute of publishing the following biographical sketch and brief summary of his works:

Clements Robert Markham was born on the 20th of July, 1830, at Stillingfleet, near York, England. His father was the Rev. David F. Markham, vicar of Stillingfleet and canon of Windsor; his mother, Catherine, daughter of Sir William Mordaunt Milner, Bart., of Nunappleton, Yorkshire. He was educated at Westminster School, and entered the British Navy at the early age of 14, becoming a midshipman at 16 and a lieutenant at 21. In 1850–51 he served on the Franklin Search Expedition in the Arctic regions under Capt. Austin, his experiences and observations on this memorable journey forming the subject of his first notable literary effort, Franklin's Footsteps, published in 1852.

How he first became interested in Peru and was led to undertake his first expedition into that region of adventure and romance is perhaps best told in his own words, written after he was 80 years old, and forming part of the preface to The Incas of Peru:

> The fascinating story of Inca civilization was told to our fathers by Dr. Robertson, whose History of America appeared in 1778, and to ourselves by Mr. Prescott, whose Conquest of Peru was published in 1843. It is assumed that most educated people have read the latter work. But since its publication a great deal of subsequently discovered material has quite altered our view of some things, and thrown entirely new light upon others. Yet Mr. Prescott's work can never lose its high position as a carefully written and very charming history.
>
> It is now more than 60 years ago since the present writer came under the influence of that fascination, when, as a naval cadet on board H. M. S. *Collingwood*, the flagship in the Pacific, he first gazed on the land of the Incas. The noble *Symondite* line-of-battle ship rounded the northern headland of San Lorenzo Island, and made her stately way to her anchorage in Callao Roads. I was just 14, and under the wing of Lieut. Peel, aged 19 (afterwards the gallant Sir William Peel), who was officer of my watch on the forecastle. We gazed on the scene before us, the bright green plain rising by a gentle slope to the mountains, with the white towers of Lima appearing on its farther skirts, and behind the mighty cordillera rising into the clouds. During the four years of our commission we were five times at Callao, staying some months at a time. I got to know Lima very well, and made some friends, including the beautiful Grimanesa Althaus, to whom I was afterwards much indebted in my researches,

and the aged Señora O'Higgins, daughter of the Spanish Viceroy of Peru from 1796 to 1801. I knew the banks of the Rimac between Lima and its mouth even better, and I visited the vast mounds or huacas in the plain. In those days youngsters on the Pacific station were carefully taught French and Spanish, as well as navigation.

It was not until my return, in 1848, that I was able to obtain a copy of Prescott's Conquest of Peru, which I devoured over and over again with intense interest. During the winter of my service in the Arctic regions I had a copy of the Quichua Dictionary by Torres Rubio to study, which I had bought in Lima, and the Doctor had Holguin's Grammar, so that I was able to acquire some knowledge of the language of the Incas. On my return I studied all the authorities within my reach, and in August, 1852, I resolved to undertake an expedition to Peru. I was practiced in observing the heavenly bodies for latitude and longitude, and I could make a fairly good survey of ruins, and maps of my routes.

. In order, however, to make his preparation for the expedition as thorough as possible the young explorer, then but 22 years of age, determined to have a personal interview with the great historian whose work had been of such potent influence in arousing his own enthusiasm. He therefore set out for Boston with letters of introduction from Lord Carlisle and others. Arriving in the United States he found that the historian was living at his country place at Pepperell in New Hampshire, whither the young adventurer was cordially invited by Mr. Prescott. Here he spent 10 days in the society of the most charming and most widely read historian that the United States has produced. Sir Clements gives us the following intimate picture of Prescott and his home life:

Our party consisted of Mr. and Mrs. Prescott, their son Amory, the secretary, and myself. Mr. Prescott's house was a long wooden building with a covered veranda extending half its length, tall shady trees in front, on a lawn dividing the house from a quiet country road. There was a pleasant shady walk behind the house, of which Mr. Prescott was very fond; for, though his sight was bad, he was not quite blind. He could see enough to get about the house, and even to take walks by himself, but not to read.

He conversed with me in his large study, where he took notes on a slate with lines, while his secretary read to him. The notes were then read to him, and, after some thought, he began to dictate. We talked over Peru, and he explained most lucidly the comparative value of the authorities he had used, adding that there were probably others of equal importance that he had not seen. Once he said that no history could be quite satisfactory unless the author was personally acquainted with the localities he had to describe. He gave me valuable advice, and said that he would be much interested in the results of my journey. I used to drive over the country in a buggy, and pull on the quiet little Nissisisett River with Amory. My stay of 10 days at Pepperell, with the great historian, is a time which I always look back to with feelings of pleasure and gratitude. It was a fitting introduction to my Peruvian researches.

Having finally arrived in Peru, he made several excursions from Lima and explored the coast as far as Nasca. He then crossed the Andes from Yca by an unfrequented pass to Ayacucho, where he established his headquarters and made numerous excursions, going finally to Cuzco, the ancient capital of the Incas. His emotions

upon first beholding this historic city may be surmised from the following paragraphs in his Cuzco and Lima:

> Passing on across three fertile plains, separated from each other by low ranges of hills, and producing wheat and every kind of vegetable, I reached the foot of a range of rocky heights as the sun set. The sky was deeply blue, without a single cloud, with a bright and silvery moon; and as I arrived at the summit of the pass, it threw its pale mournful rays over the city of Cuzco, spread out in the plain below.
>
> Cusco! City of the Incas! City where, in bygone times, a patriarchal form of government was combined with a high state of civilization; where works were conceived and executed which to this day are the wonder and admiration of the wanderer; where a virtuous race of monarchs ruled an empire equal in size to that of Adrian, exceeding that of Charlemagne.
>
> Cuzco! The hallowed spot where Manco's golden wand sank to its head into the ground; the favored city, whose beautiful temple surpassed in splendor the fabled palaces of the Arabian Nights; where the trophies of victories, won on battlefields from the Equator to the temperate plains of Chile, were collected; where songs of triumph resounded in praise of Ynti, the sacred deity of Peru—of Quilla, his silvery spouse—of the beneficent deeds of the Incas.

Here in the remnant of the glories of a conquered and almost obliterated American race he spent several weeks, carefully examining the ruins and learning much from such recipients of folklore as Dr. Julian Ochoa and the Señora Astete. From Cuzco he went to the valley of Vilcamayu and extended his researches, going thence over the Andes to spend some weeks with Dr. Justiniani, a descendant of the Incas, at Laris, gaining much valuable information and copying some of his rare manuscripts. His next journey was to Paucartambo from which place he penetrated far into the wild montaña, finally going from Cuzco to Arequipa by the lofty pass of Rumihuasi. Upon his return to England he wrote his first work dealing with Peru, ordinarily known by the title "Cuzco and Lima," which was published in 1856.

The book, in addition to a detailed description of the journey to Cuzco and the geographical and topographical features of the country through which he traveled, contains an account of the history, language, literature, and antiquities of the Incas; a description of Lima and the provinces of modern Peru; a sketch of the viceroyal government; a brief sketch of the Republic; and an account of the social and literary life of the country. In the appendix is embodied a short sketch of the grammar and a vocabulary of the Quichua language, giving much practical information which has been found of great advantage by subsequent travelers in the Peruvian interior.

In 1859 the British Government determined to send an expedition to Peru, Ecuador, and Bolivia for the purpose of collecting plants and seeds of the valuable species of *Chinchonæ*, with the purpose of introducing their culture into India. Young Markham had already been made a Fellow of the Royal Geographical Society, and his

scientific and literary attainments had given him such prominence that the Government selected him to take entire charge of the expedition. As is well known, it is the bark of various species of the cinchona tree that furnishes the world with its most valuable febrifuge, the sulphate of quinine. The native habitat of these trees is to be found in Peru, Ecuador, Bolivia, and Colombia, and the world had depended upon the forests of these countries to supply it for something over 200 years. The wasteful destruction of the trees by the native gatherers was threatening their extinction and the price of quinine was increasing at an alarming rate. The Dutch had started small plantations in Java, and it remained for Markham to render the world what from a strictly utilitarian point of view may be deemed his greatest service. With the assistance of four or five agents who worked under his superintendence and numerous natives he collected seeds and plants of the several species and varieties which yielded the valuable bark, and then embarked with them to India, where their successful transplantation was largely due to his personal efforts. It was his knowledge of the native forests in which the trees grew, of the soil, climatic conditions, elevation, etc., that finally brought about the pronounced success of the plantations in India and Ceylon, thereby giving to the world its most valuable medicine at a remarkably cheap price. In 1862, shortly after the success of the India plantations had been established, he published his account of the expedition to South America and the subsequent journey to India in a volume to which he gave the title "Travels in Peru and India."

It was during this second extended sojourn in Peru that Markham was enabled to explore a great part of the northern half of the basin of Lake Titicaca and the Montaña of Caravaya. He also was given access to new mines of information relative to the early history of the country among the *Papeles Varios* preserved in the library at Lima, and succeeded in collecting several original Quichua songs. In 1863 he published his "Quichua Grammar and Dictionary," a most valuable contribution to students of the philology of the native races of South America.

In 1867–68 he accompanied the Abyssinian expedition as geographer, and was present at the storming of Magdala. His History of the Abyssinian Expedition was published in 1869. From 1867 to 1877 he was in charge of the geographical department of the Indian office. In 1871 was published his excellent translation of Ollanta, a Quichua Drama. Then came other works in rapid succession, of which the following are perhaps the best known: Memoir of the Indian Surveys (1871); General Sketch of the History of Persia (1873); The Threshold of the Unknown Region (1874); A Memoir of

the Countess of Chinchon (1875); Missions to Thibet (1877); Peruvian Bark (a comprehensive account of the collection of the cinchona plants and seeds in South America and of the successful introduction of their culture into India, Ceylon, Java, etc., published in 1880); Peru (1880); The War between Chile and Peru (1879–1881); The Sea Fathers (1885); The Fighting Veres (1888); History of Peru (published by Charles H. Sergel & Co., Chicago, Ill., 1892); Paladins of King Edwin (1896); The Incas of Peru (1910); The Conquest of New Granada (1912). He also wrote the Life of the Great Lord Fairfax; Life of John Davis the Navigator; a Life of Richard III; Life of Admiral John Markham; Life of Columbus; and a Life of Admiral Fairfax. In addition to these original works he edited and wrote comprehensive introductions to over 20 works of the Hakluyt Society, 14 of which were his translations, besides writing nearly a hundred papers and articles for the Royal Geographical Society Journal, voluminous reports of India, etc.

In the literary and scientific life of England Sir Clements Markham occupied a unique place. His tireless energy and conspicuous ability brought his services into great demand in the learned societies. From 1858 to 1887 he was secretary to the Hakluyt Society, becoming its president in 1890; from 1863 to 1888 he acted as secretary to the Royal Geographical Society, and on his retirement from this service received the society's gold medal for his distinguished services to the science of geography. He was elected president of the society in 1893 and retained that office for the unprecedented period of 12 years. In his early youth he was made a Fellow of the Royal Geographical Society; in 1873 he was elected a Fellow of the Royal Society; in 1871 he was created Companion of the Bath, and in 1896, a Knight Commander of the Bath. He was an honorary member of all the principal geographical societies of the world, was selected as the president of the International Geographical Congress which met in London in 1895, and president of the Eighteenth International Congress of Americanists held in London May 27 to June 5, 1912.

As a geographer, historian, archæologist, and intrepid explorer and traveler few men have attained such eminence. Some of his works were written for the elect in the world of science, but many more were intended for that larger world of readers who are interested in a more general way in the history of man, his growth and development in the out-of-the way regions of the earth as well as in the older centers of civilization. Many of these works have run through several editions, and many of them will serve to instruct and delight generations yet unborn. The death of this kindly, sincere, and generous friend of all humanity marks the passing of another of the world's great benefactors.

RUBÉN DARÍO

IN Nicaragua, his native country, died the poet Rubén Darío. For the last 25 years wherever the Castilian tongue is spoken no other name in literature carried more weight than his. At first it was the red rag of rebellion against old methods and worn-out forms; later it was the standard of a triumphant school of literature. From the first appearance of his book Azul, a collection of exquisite tales which were as the dawn of renaissance in artistic writing, all Spanish-speaking America hailed Darío as an innovator. Even across the water where tradition is deeper rooted, the caressing yet bitter voice of the master Valera signalized the book as promise of flowering springtime.

RUBÉN DARÍO.

Born in 1867 and died February 7, 1916, in Leon, Nacaragua. In prose and poetry Darío exercised a marked influence, especially in introducing a number of metric forms not before used in Castillian verse.

But it was in poesy where more stoutly he had to battle and where he won more enviable laurels. When Darío leaped into the arena of literature there was being wrought in France, in England, and even in Italy a sweeping reform in poetic language and meter which to the eyes of the severe guardians of the age-worn Castilian standards appeared as a very cataclysm. But our poet had drunk as from a sacred fount the waters of foreign poesy, and to reproduce in his own the soul-stirring accents of other tongues from the beginning revealed itself to him as the very enchantment of color and of music never before tasted or felt.

Born in 1867, he died in Leon, Nicaragua, February 7, 1916. At the beginning of the European war Darío was engaged in editing

[1] Translated from the article by A. C. R., in the February number of the Boletin de la Unión Panamericana.

La Revista Mundial in Paris. Saddened by the horrors of war, he resolved to return to America. Arriving in New York, he was enthusiastically received, but, suffering from the infirmity which at last bore him to the grave, he was scarcely able to respond to the special invitation to read an ode to peace before the faculty and students of Columbia University. From New York Señor Darío went to Guatemala, where he was also most enthusiastically received. Here his health entirely failed and, scarcely alive, he was borne at last to his native land, Nicaragua, and there after life's turbulent dream he sleeps in peace.

Rubén Darío exercised the functions of diplomatic representative of Nicaragua in Spain, and was one of the delegates for Nicaragua to the third Pan American Convention, which met in Rio de Janeiro.

CENTRAL AMERICA OF TO-DAY—GUATEMALA.[1]

TO adequately describe the natural beauties of the Republic of Guatemala or picture its scenic wonders would require the flowery expressions of a poetic genius or the master hand of a skillful artist. But even the most prosaic traveler, devoid of poetic instinct or artistic temperament, can not fail to be impressed with these wondrous charms nor refrain from attempting, though in an humble way, to give expression to the delight which he feels in traveling through this privileged zone of Central America. So abundantly has Nature bestowed her gifts upon this land that you can well understand why many of her citizens are wont to refer to it as "Paraiso" or Paradise. It is a country of hills and mountains, tropical forests, lakes, rivers, coasts, and plains.

Guatemala with her 48,290 square miles is the second country in point of area of the Central American group, but the 2,119,165 inhabitants give her the ranking position in point of population. With the exception of small strips along both the Atlantic and Pacific coasts, the Republic lies at an altitude of from 4,000 to 11,500 feet. The chain of mountains which traverses its territory and sends out a number of spurs forms plateaus which are extremely fertile and healthful, and on which Tropic and Temperate Zone products of nearly every variety are successfully grown. Few portions of the earth present a greater diversity of level in an equal amount of surface or a greater variety of mild and delightful climates.

[1] By Harry O. Sandberg, of Pan American Union staff.

A RELIGIOUS CELEBRATION ON THE TOP OF CERRO DEL CARMEN.

On this hill, affording a splendid view of the city, stands the old church to the Virgin Carmen. With its rude columns and turrets it resembles a fortress more than a peaceful shrine of worship. The musty and cobwebbed bell suspended in the tower bears the date of 1748, placing the building of this church more than a quarter of a century before the founding of the city. During the annual religious fiestas this sacred site is the assembling ground for the thousands of people who come to celebrate the holiday.

CATHEDRAL AT GUATEMALA CITY.

With its cupola and towers the cathedral rises above the other buildings in the city. It occupies a commanding position in the main plaza and its entrance is guarded by four massive statues representing the four evangelists.

THE POST-OFFICE BUILDING AT GUATEMALA CITY.

Artistic and spacious, the building houses the postal department of the capital. The different divisions, such as registry, parcels, ordinary correspondence, etc., have distinct entrances.

In this country you will find a hundred and one things which are a constant source of interest and pleasure. Sunshine and flowers surround your path at every turn. Beautiful hills and rugged mountains are ever before you; rising to majestic heights the symmetrical cones of numerous volcanoes seem to hem you in on all sides. In the hollows of the mountains lie a number of lakes, beautiful bodies of water almost as blue as the famous Swiss lakes and reposing in locations nearly as picturesque. Strange sights greet you in every part of the country. Guatemala, up to date in every way, with most of the comforts and accommodations of a North American or European capital, still retains in all their beauty and simplicity many of the peoples, customs, habits, and institutions of those ancient Indian tribes who flourished, ruled, and conducted kingdoms of high degrees of civilization long before the crushing hand of Cortez, Alvarado, and others came to conquer and subjugate them. And it is these striking contrasts that make you feel as though you were roaming through a twentieth century fairyland.

The contrast you see revealed in the antique little adobe homes of bright and light-colored hues glistening in the brilliant sunlight, side by side with the modern dwellings of more pretentious character; you notice it in the little native woman clad in the bright and gay colors of her ancient costume walking along the street with her sister gowned in the latest modes from Washington, Paris, or Berlin; you find it in that most interesting of institutions, the public market, where quaintly stocked booths and smiling venders offer their wares as you pass and those splendidly equipped shops where the upper classes do their daily shopping; in fact you see it and feel it at every turn, and the spell and charm that surround it all make you wonder why it is that the jaded traveler, seeking new sensations and novel scenes, will journey to Europe year after year when right here at his very door lies this land so delightful, so stimulating, and so refreshing.

Guatemala is the most northern of the Central American group. It is accessible from both the Atlantic and Pacific coasts and boasts of seaports on each. On the Atlantic side are Puerto Barrios and Livingston, touched by steamers of several lines from New York, New Orleans, Mobile, and Boston, as well as from Europe. San Jose, Champerico, and Ocos comprise the Pacific ports, and these are usually stopping points for steamers plying the west coast between San Francisco and Panama. And now that the section of the Pan American Railway to Ayutla, on the Mexican frontier, has been completed, there is direct rail communication between those two countries. So that, with railways reaching the capital city from both coasts, and with such easy and frequent intercommunication with the outside, the

TEMPLES OF MINERVA IN GUATEMALA.

The Republic of Guatemala has made marked advances in education. President Cabrera is a firm believer in educating the young in order to attain the highest national development. Temples to Minerva have been erected in many parts of the country and around these shrines the school children gather and with appropriate exercises celebrate the holiday decreed in honor of their patroness.

LAW SCHOOL AT GUATEMALA CITY.

This school has the short course of law of five years; in most Spanish American countries it is six years, in some seven, and in one eight years. The required studies embrace not only civil, criminal, and commercial law, court procedure, and the philosophy of law, but also international law and an outline course on Spanish and Spanish American literature.

MODERN BUILDINGS AND STREET SCENE IN GUATEMALA CITY.

country has enjoyed an advantage and opportunity which have doubtless contributed much to its progress and advance.

But what are the sources of wealth of this land of sunshine and flowers? What are the products which bring riches to its shores and furnish work to its industrious people? The answer is a single word—the soil; a rich, fertile soil and abundant rainfall making possible two crops of wheat a year, three crops of corn annually, rich yields of coffee, and large productive acreages of bananas and sugar cane. Nor is this all, for chicle and rubber are also produced in substantial quantities, and the immense forests of valuable timbers, the extensive regions of unexploited mineral wealth, and the ever-increasing number of cattle combine to spell the wealth of the land. More explicitly, this country enjoys a foreign commerce of nearly $25,000,000 per year. It is true that at present, due to the war and other economic factors, conditions are not up to their usual standard, but there is every hope that, once an economic readjustment takes place, Guatemala will again occupy her wonted place of importance.

Arriving at Guatemala from the Atlantic side you disembark at Puerto Barrios. Splendid docks and wharves and the conventional structures of the United Fruit Co. attract your attention. But before proceeding to the capital you may be fortunate enough to enjoy a trip up the Rio Dulce to Lake Izabal and gaze upon scenery unsurpassed in any part of Central America and in few parts of the world.

First you proceed to Livingston, the port 12 miles north, from which point you commence the sail up this magnificent river—large, clear, hedged in on both shores by towering cliffs and presenting a succession of scenes of riotous beauty. At times the rocky walls rise almost perpendicularly from the water to a height of several hundred feet, but never do you see the barren cliffs, for the sides are completely covered with vegetation—dense growths of tropical vegetation - and from every crevice hang vines and shrubbery swaying like green curtains in the breeze, and dipping their foliage in the river. Higher up giant trees, covered with thousands of beautiful orchids, cast their shadows in the deep blue waters underneath. The gay colors of the macaw, the vivid shades of the parrot, the brilliant and sparkling feathers of the quetzal, and the gay plumage of myriads of other birds enhance the already gorgeous scene. Under the clear skies of a perfect day and the sparkling rays of a brilliant sun, the play of sunlight and shadows present vistas of rare beauty.

You continue along the river until it widens into the gulf or "golfete," and all the while you hear the weird music of the incessant chatter, whistle, croak, chirrup, coo, warble, screech, and squawk of the hundreds and hundreds of birds that make these pro-

MONUMENT TO GEN. JUSTO RUFINO BARRIOS.

At the end of the wide boulevard, La Reforma, and fronting the national museum building is this equestrian statue in bronze dedicated to the memory of the former President. Barrios served in office for about 12 years from the time of his first election in 1871. Ruling with a determined will, historians agree that Guatemala made its first real strides of progress during his administration.

PRESIDENT CABRERA AND GUESTS VIEWING THE EXHIBITION OF THE GUATEMALAN SCHOOL OF AVIATION.

Upper: The President is in the foreground, wearing on his breast the national insignia. On his right are Sr. Don Arturo Ubico, president of congress, and Sr. Don José Maria R. Andrade, minister of interior. On his left are Capt. Walter F. Martin, United States military attaché; Gen. Padilla, aide to the President; and Sr. Don Eduardo Giron, minister of public instruction. Lower: Members of the aviation school established by President Cabrera. The school has two Moissant aeroplanes and a military passenger-carrying machine. The personnel include C. Marvin Wood, who went from the United States to take charge of the school; Luis Ferro, Delfino Sanchez Latour, Dante Nannini, Feliz Tripeloury, and Frank Bangs.

tecting shores fairly swarm with life. The smoothness of the water is broken every now and then by the sudden ripple of alligators who have been disturbed in their play or sleep by the steady chug-chug of the gasoline launch sailing too closely to their hidden coves. At last another connecting stream, and Lake Izabal stretches before you, so calm, so peaceful, and so inviting. On one shore are the last remains of the old Spanish fort, San Felipe, dating back four centuries—crumbling ruins thoroughly overgrown with vegetation and creeping vines. A mere handful of people live here, and the simplicity of their homes and their manner of living make a strong appeal to lovers of nature.

But of such picturesque and charming spots Guatemala has many. They are part of her natural endowed possessions. She boasts, however, of an equal number of interesting scenes, the handiwork of mankind reflecting the brain and industry of her people, and a trip from one coast to the other affords you opportunity to see many of them.

First comes that remarkable trip to the capital, a distance of 225 miles, where you start at sea level in early morning and pass through many miles of tropic country, with its endless variety of palm trees and other tropical growths. Toward noon you reach the hot regions of no rainfall, where only the cacti and yuccas thrive. Then comes the ascent to the capital, a rise of 5,000 feet, and presenting a picture of abysmal gorges, stern hills, and picturesque countryside, all widely abrupt and fascinating in the extreme.

En route you pass the richly foliaged banana lands and the little towns that have sprung up to care for the workers of these plantations. Away from the main line, and hidden among these plantations, are the famous ruins of Quirigua, those wonderfully carved monoliths, stones, and relics of a prehistoric race of which little is known and yet which bespeak the existence of a civilization probably centuries before the modern world commenced to chronicle its history.

At last you arrive at Guatemala City and an automobile rushes you off to one of the comfortable hotels. There are a number of such at the capital and one of them even boasts of private baths and running hot and cold water in each room, veritable luxuries for tropic hostelries.

Attractive stores line the principal streets of the capital and a lively traffic is ever going on. Department stores, with tastily dressed windows, display the latest modes of milady's wardrobe in one window and exhibit choice pieces of household furniture in the other; well-stocked jewelry shops, with sparkling gems and cleverly wrought articles in precious metal, imply the fondness of the people

THE WIRELESS STATION AT GUATEMALA CITY.

The installation of this radio set has recently been completed. When President Cabrera decreed its establishment he secured the services of an expert from the United States. There is also a radio operators' school in connection with this station.

THE ROYAL PALACE AT ANTIGUA, GUATEMALA, AN IMPRESSIVE REMINDER OF THE SPLENDOR OF THIS ANCIENT CAPITAL.

It occupies the entire south side of the main plaza and is one of the very few remains that have been restored at this former capital. It is used to-day as the offices of many of the municipal and department bureaus. In the early history of the country, when Antigua was the capital, the palace was the home of the captains-general. The central arch still bears the Castilian coat of arms with the name of Carlos III, under whose rule the palace was constructed.

for such ornaments; numerous specialty shops, catering to single lines, is a development of local business that is foreign to many other tropic cities; the numerous book, stationery, and music stores bespeak the intellectual side of the country. But aside from the economic and commercial aspects, the educational development of the country is impressive, as are also the numerous public buildings and institutions.

Twenty-three temples to Minerva, occupying commanding positions throughout the Republic, proclaim to the world President Estrada Cabrera's devotion to the goddess of learning. Around these classic shrines there gather annually, during the fiestas of Minerva, the 60,000 children from the 1,850 schools, and there with song and flower they pay tribute to the goddess whom the chief executive in his statesmanlike wisdom has so closely cherished.

However, no description of the schools would be complete without mention of the military academy, the West Point of Guatemala, housed in a massive structure of Gothic architecture, the new manual training school for boys, the practical school of arts for girls, and the academy of fine arts. There are also numerous private schools. The physical equipment is adequate and in many cases even elaborate, and the English language forms a compulsory part of the curriculum.

Among other public places worthy of special note are the medical and law schools; the public hospital; the Estrada Cabrera Asylum; the Joaquina lying-in hospital; the national museum; the juvenile house of correction; the Teatro Colon; the Hippodrome and the numerous parks; and the boulevard, La Reforma, with its dividing swarth of green dotted here and there by a statuette, a monument, or some artistic embellishment.

The teaching of English in the public schools is not a matter of mere accident. President Cabrera, during his long years of office, has always felt a warm regard and friendship for the United States, and this is but one manifestation of it. Another is the following: To keep apace with modern progress the chief executive decided to erect a wireless installation at the capital, and through his diplomatic representative in Washington arranged with the United States Government for the services of one of its experts. Uncle Sam, equally friendly, granted the service, and Joseph H. Watts, of the United States Navy, with a corps of Guatemalan assistants, has erected the first set near Fort San José. The two towers, 200 and 350 feet in height, rise high above the city's loftiest point, and now electrical flashes are used to transmit messages for a distance of 2,000 miles. A radio operators' school has been maintained in connection with the construction work, and already a dozen of the younger men from the technical schools have qualified as expert operators.

PICTURESQUE LAKE SCENES IN GUATEMALA.

Amatitlan, Atitlan, Izabal, and Ayarza are perhaps the better known of the lakes of Guatemala. They have striking settings and the interest around them is still further enhanced by the peoples who live in the adjoining "pueblos" or towns.

THE QUETZAL, THE NATIONAL BIRD OF GUATEMALA.

The quetzal is decidedly a bird of freedom and will not live in captivity. The pretty legend states that when captured it will curl up and break its long sweeping tail and then die of grief. This bird of freedom has been adopted as the national emblem of liberty and forms a conspicuous part of the coat of arms and flags. The quetzal is relatively a small bird; the wing coverts and tail feathers are of a superb peacock green, changing to indigo; the inner breast a scarlet; and the wings very dark. In ancient days none but the royal family could wear the beautiful plumes, which sometimes exceed 3 feet in length.

Another instance of the President's desire to promote the closest ties of association with the United States is in the school of aviation which he recently organized. To take charge of the flying exhibitions and to teach the science of aviation to the pupils who might enroll, President Cabrera engaged the services of C. Marvin Wood, who achieved considerable reputation in the United States, and to-day Aviator Wood may be seen on Campo de Marte experimenting with the flying machines of the Guatemalan School of Aviation.

From the capital city you make the trip to Antigua, where you may view at close range the volcanoes which rise sharp and distinct against the blue sky of a clear day—the symmetrical outline of Agua, the serrated ridge of Fuego, and the majestic peak of Acatenango, and at the same time gaze upon the remains of what once was the magnificent capital of this Republic. One writer has called Antigua "the most prolific spot of the dead and the past." Here the skeletons of nearly 60 churches bear silent testimony to its former grandeur, so thoroughly devastated by a volcanic eruption in 1773. The remaining arches and domes, the beauty of the now dilapidated and crumbling façades, and the exquisite carvings seen here and there in the details that still remain, give some idea of Antigua's splendid past.

But returning to the capital you now entrain for San José, the Pacific port, and get a glimpse of the main source of the country's wealth. Just as along the northern line you admire the vast banana plantations, so on this side of the 70-mile distance you enjoy the sight of beautiful coffee "fincas" and luxuriant sugar-cane plantations. Hundreds of workers are picking the cherry-red berries from the trees and heaping them in their already over crowded baskets. In the cane fields the farmer with his wide-brimmed and peak-crowned hat is busy cutting down the stalks. These coffee plantations represent only a few of the 2,000 which are said to flourish throughout the various sections of the country, but they include a number of the largest and heaviest producing ones. Nearly 100,000,000 pounds is the country's annual production. The quantities exported are valued at over $9,000,000—66 per cent of the total exports. Before the war more than one-half of the annual output was sent to Germany and Austria, and a large portion to England. Now the former markets are shut off, but the United States is helping the situation and has increased its imports from 16,000,000 to 28,000,000 pounds.

Another source of wealth possessing great potential value is the cattle industry. At present there are estimated to be in Guatemala over 600,000 head of cattle and nearly half a million head of sheep; together with other live stock there are over a million and a quarter head of various kinds. Because of the prohibition of export the number continues to increase. As suitable cattle land is cheap and

THE LARGEST MONOLITH OF THE QUIRIGUA RUINS.

The ruins at Quirigua consist of numerous monoliths, sacrificial stones, and similar relics, made of sandstone, and all in a fair state of preservation. Each of these historic pieces is profusely decorated with interesting carvings, including faces, figures, and various hieroglyphics. Archeologists and scientists have studied these ruins, but have not yet succeeded in deciphering the carvings. Beyond the certain conjecture that an ancient and highly developed civilization flourished here, the story of Quirigua remains still a sphinxlike riddle.

Photograph by A. V. Alford.

SHIPPING MAHOGANY FROM GUATEMALA VIA SAN JOSE, THE PACIFIC PORT.

The mahogany-cutting business is pretty thoroughly organized in this country. Large tracts covered with the valuable timber are found in the Choconf orests, on the smaller tributaries of the Polochic, and in the Montagua Valley. The Government claims, however, to have considerable areas of mahogany as well as other commercially valuable lands available for exploitation. The timber exports average about $400,000 in value annually.

water generally plentiful, if export conditions could be satisfactorily adjusted, this should be one of the great industries of the land. At present the hides and skins exported are valued at nearly a half a million dollars.

In this connection Dr. Adrian Recinos, one of the Guatemalan delegates to the Second Pan American Scientific Congress, stated that the minister of fomento and the general department of agriculture are showing special interest in the development of the cattle industry and its commercial phases. "Taking advantage of the exceptional conditions of soil and climate," said Dr. Recinos, "the people have directed their efforts mainly to agriculture, with cattle raising as a natural additional feature. On most of the plantations are large acreages devoted to stock raising. The quality of cattle is excellent, due to the introduction into the country of foreign stock for breeding

STREET SCENE IN GUATEMALA CITY.

purposes. Although large areas are given over to cattle, there are still available immense regions with excellent pasturages."

Mining and lumber represent two other great resources. The provisions of the mining code are very liberal; progress is being made in the matter of developing means of communication, and capital should find profitable returns in developing the ores of iron, lead, zinc, silver, gold, lignite, and sulphur, which are found in the mining departments of the country. As to lumber, the magnificent woods found in the virgin forests of the country contain nearly 400 species. Of these 150 are commercially valuable, including mahogany, cedar, ebony, walnut, pine, and dyewoods.

You finally reach San José, and as this port is an open roadstead vessels anchor some distance from the shore, and you enjoy the exciting experience of being hoisted down from the dock in a cage-like basket into a lighter below and then rowed over to the ship which carries you southward to the next port, Acajutla in Salvador.

PAN AMERICA IN THE MAGAZINES

A South American Odyssey is the title under which the editor of the West Coast Leader (Lima, Peru) publishes a letter he recently received from Harry A. Franck, the American traveler and author, who has given to the English reading public some of the most entertaining and instructive travel stories ever written. Mr. Franck's method of obtaining information anent the various sections of the world which may for the time being arouse his interest, is by walking from place to place, where possible, stopping occasionally to work for a week or longer when it becomes necessary to replenish his finances or when conditions demand special study, and thus proceeding leisurely until he has covered the country completely. In the meantime he has worked, talked, and lived with all classes of its people. He makes the acquaintance of the highest officials, and works side by side with ordinary day laborers. One day he is the honored guest of a United States ambassador or minister, the next he is breaking bread and fraternizing with the hardy natives who are laying crossties on a new railway route. When his sojourn in a country is finished he knows that country and he knows its people. A keen observer and close student of men and affairs, a tolerant cosmopolite, resourceful and gifted with the saving grace of humor, Franck as a writer is unique and his books are always of absorbing interest. Those who have read his famous Vagabond Journey Around the World, or his Zone Policeman No. 88, will look forward with anticipation of new pleasures to the forthcoming account of his four years' journey throughout Latin America. To give an idea of the scope of his travels and the manner in which he covered this vast territory of the southern continent his letter to the West Coast Leader is herewith reproduced:

I left Milwaukee, Wis., on September 13, 1911, worked in railroad and labor gangs in Illinois, Oklahoma, and Texas, and crossed the Mexican border on October 7. Train and afoot to Guanajuato, where I spent 20 days as a car boss in one of the principal gold and silver mines for the purpose of studying the mine peon. After covering the State of Michoacan and other portions of Mexico on foot, I spent some time in Mexico City. Zapata's marauders made inadvisable my planned walk from the capital to Tehuantepec. Proceeding there by train, I walked into Guatemala, covered a considerable portion of that country by train, and descending near the frontier of Honduras walked entirely across that country via Tegucigalpa, the capital, to the port of Amapala, and sailed for Panama. Sighting Salvador and touching at Nicaragua and Costa Rica, I landed at Panama on January 21, 1912, with the intention of sailing two days later for South America. Canal Zone life looked so interesting, however, that entirely out of personal curiosity I took and held for five months a position as Canal Zone policeman.

Photograph by W. V. Alford.

CULEBRA CUT SECTION OF THE PANAMA CANAL

The picture shows Culebra Cut just after the serious slide of September, 1915, occurred. Since then numerous other slides have occurred, causing the closing of the canal to practically all commercial traffic for the time being. According to the recent report of a commission of scientists appointed by President Wilson to study the slide situation, they occur from two general causes, viz, (*a*) the weak and unstable geological condition of the rocks through which the Culebra Cut passes, attributable to nature alone; and (*b*). to the over-steepness and height of the slopes, the blasting, and other work for which man is responsible. The engineers believe that the rock conditions along the canal will limit the slides within fairly definite bounds and that, when the slide slopes have been reduced to what they call the angle of repose, the slide problem will be practically solved. It seems likely, however, that several months will elapse before the great waterway will be again available to the shipping of the world.

Photograph by I. F. Scheeler.

LA GUAIRA, CHIEF PORT OF VENEZUELA.

Situated at the base and on the jagged edges of a rugged mountain which rises almost directly from the breaking surf of the Caribbean Sea to a height of over 8,000 feet is La Guaira, the principal seaport of Venezuela. It is connected with Caracas, the capital of the country, by a remarkably picturesque railway. In a direct line over the mountains the two cities are but 8 miles apart. Being the chief port of entry, the harbor of La Guaira is nearly always crowded with foreign ships and presents a busy as well as naturally beautiful scene.

GOVERNMENT MILITARY SCHOOL AT BOGOTA, COLOMBIA.

The Government of Colombia established in 1848 a school for the training of officers for the regular army. In 1907 the school was reorganized and the force of instructors increased. The law provides that the number of cadets shall be limited to one hundred. Students are admitted between the ages of 17 and 20 and a four-year course of instruction is provided.

BRIDGE OF SAN ROQUE, CUENCA, ECUADOR.

The city of Cuenca lies in a valley 7,800 feet above sea level at about 70 miles in an air line southeast of Guayaquil. Cuenca was founded in 1757 on the site of the ancient settlement of Tumibamba. Through the Republic of Ecuador from north to south two chains of the Andes stretch. Between these mountains are the high tablelands, the most thickly populated sections of Ecuador. About 100 miles apart are the three leading inland cities of the country, Quito in the north, Riobamba in the center, and Cuenca in the south. From ancient times the trade routes have existed between these centers of commerce and the coast ports, of which Guayaquil is the most important.

Photograph by W. V. Alford.

CUZCO, PERU.

Perhaps no city in South America can rival in point of historical interest Cuzco, the ancient capital of the Incas. Only 800 miles from the Equator, the city is situated at such an elevation (11,380 feet above sea level) that a white mantle of snow frequently covers its streets and plazas. According to Peruvian authorities the city was founded about 1050 A. D. by Manco Capac, the first of that great line of Incas that dominated this section of South America for so many centuries. Among the many interesting Incarial ruins that may still be seen in and near the city are those of the palace of the first Inca and the famous Temple of the Sun, on Saesahnamana Hill. Many of the older houses of Cuzco of to-day are partially of Inca construction, while the massive stones that now form portions of modern churches were taken from the ruins of ancient temples and palaces. The "Great Plaza," shown in the foreground of the above picture, was once the scene of Inca festivals and religious ceremonies of great pomp and splendor.

Photograph by I. F. Scheeler.

LAKE TITICACA, BOLIVIA

The highest steam-navigated lake in the world is Titicaca, which lies partly in Peru and partly in Bolivia. The level of this lake is 12,545 feet above sea level. It is about 80 miles long by 40 miles broad, and is divided into two unequal parts by the peninsula of Copacabana, the southern division, called the Lake of Huaqui, being united to the larger body by the narrow strait of Tiquina. The principal islands of the lake are Titicaca and Coati, near the above-named peninsula. Near the southern shore of the lake are located the famous ruins of Tiahuanacu, relics of temples and palaces built by a people whose rule must have antedated that of the Incas by hundreds of centuries and of whose culture and civilization nothing remains save these specimens of their remarkable masonry and a few carved stone idols that have been unearthed in modern times.

On June 18 I sailed from Colon to Cartagena, Colombia, with Leo Hays, an American and until then corporal of police on the Zone. We ascended the Magdalena River by boat and to Bogota by train. Setting out from that city on August 1, we walked by way of the Quindio Pass and the Cauca Valley to Quito, Ecuador, a distance of 844 miles. There I remained four months to write up my experiences on the Canal Zone, while Hays continued his trip alone.

On February 18, 1913, I walked out of Quito and down the crest of the Andes through Ecuador and northern Peru to Cajamarca, and from there on in the same fashion, following always as near as possible the ancient Quito-Cuzco highway of the Incas, through all the principal towns among the high ranges, avoiding always any approach to the well-traveled coast. This portion of the journey was made under the difficulties of a severe attack of dysentery combined with fever, and after spending 10 days in the native hospital of Caraz, it was only finally on June 22 that I reached Cerro de Pasco and entered the American Mining Hospital. Failing of cure there also, I descended to Lima and, falling in with good people, was at length able to continue my journey at the end of August.

Ascending to Morococha and Huancayo by rail, I walked across to Cuzco, 400 miles. After visiting the remarkable ruins of Machu Picchu and others of that region, I took train to Arequipa, returned to cover Lake Titicaca and environment by steamer and afoot, and thence on to La Paz. By train and on foot to Cochabamba, from which city I walked 800 miles across the chaco of Bolivia to the Paraguay River, reaching there on February 14, 1914. Descending that stream to Asuncion, I covered the length of Paraguay by rail and part of the width by a line under construction. Entering Argentina far up in the Territory of Missiones, I descended by rail and river steamer to Buenos Aires. There I found the American consul general to be an old friend, and became for some three months assistant and translator and interpreter in charge of the "outside work" in the city of Buenos Aires and vicinity. By rail I visited all the cities of size in Argentina, going as far south as the Rio Negro on the forty-first parallel in northern Patagonia, and as far north as the sugar fields of Tucuman. Walking over the crest of the Andes and down into Chile, I visited the length and breadth of the fertile part of that country, again reaching the forty-first parallel south near Puerto Montt.

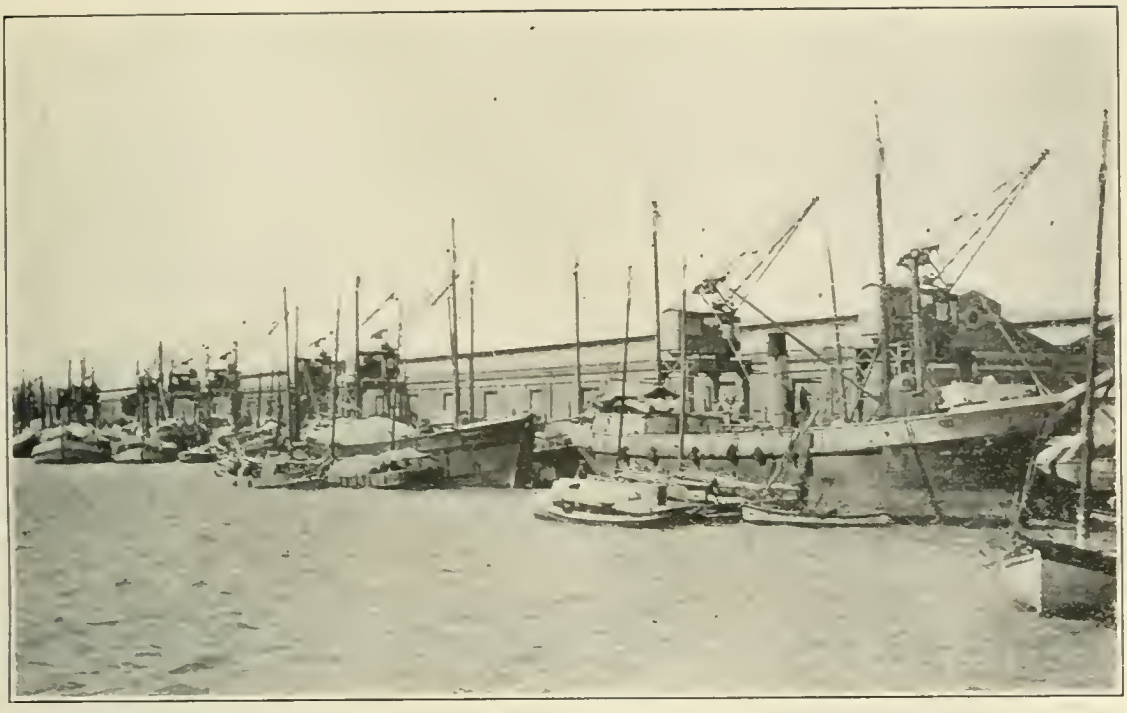
Returning to Buenos Aires, I crossed to Montevideo and visited all parts of Uruguay by rail, spent some days at one of her great estancias, and crossing into Brazil at Rivera on July 1, 1914, continued by rail to Sao Paulo and Rio de Janeiro, with stops at all cities, colonies, and points of interest. I was on the point of embarking for the United States from Rio when the European war stopped temporarily all shipping. At this juncture I was offered by Mr. R. A. Linton, with the South American concession for Edison's newly invented kinetophone, or talking moving pictures, the position of advance agent and manager for the tour of Brazil. With two assistants I covered every one of the 20 states of Brazil, playing in 49 different theaters and spending nine months in constant and intimate contact with all classes of Brazilians. In journeying in February, 1915, from Victoria to Bahia on this tour, I took to the sea for the first time since entering South America at Cartagena in June, 1912, although later I covered several other States north of Bahia again by land. On May 1, 1915, having turned the kinetophone over to the one surviving assistant, I ascended the Amazon by steamer, touching at some 20 ports, and landed at Manaos. From that city I continued by launch up the Rio Branco toward the frontier of British Guiana, rode horseback to the boundary, walked and waded the 50 miles of flooded and uninhabited pampa which separates the Brazilian and Guianese river systems, and, taking a dugout and Indian paddlers, descended the cataract-bristling Rupununi and Essequibo Rivers for two weeks, arriving in Georgetown 34 days after leaving Manaos. I visited French Guiana, covered much of Dutch Guiana, and returned along the coast, partly on foot, to Georgetown. I then ascended, via Trinidad, the Orinoco to the city of Cuidad Bolivar, tramped two weeks across the blazing desert and rock hills that separate

WATER FRONT OF VALDIVIA, CHILE

Valdivia is one of the important cities of southern Chile. It occupies a picturesque site not far from the mouth of the Calle-Calle River. This city was the fifth founded by Pedro de Valdivia, who gave it his own name in 1552. It was the scene of fierce battles between the Spaniards and the Araucanos and later, during the war of independence, one of the most notable encounters took place in Valdivia Bay when Lord Cochrane's fleet defeated the Spaniards in 1820 At present it has a population of over 20,000. The commercial section of the city, which was destroyed by fire some years ago, has been practically rebuilt of concrete ,over $700,000 having been expended on this type of construction.

AN ARM OF LAKE NAHUEL HUAPI, ARGENTINA.

One of the most picturesque lakes in South America is Nahuel Huapi, situated in the southern extremity of the Territory of Neuquen, in Argentina. The lake is very irregular in contour, having many long and narrow arms running into the valleys between spurs of the Andes Mountains. Placid little coves surrounded by snow-clad peaks, like that shown in the picture, abound in the lake region, which only awaits the completion of a railroad from Bahia Blanca, an Atlantic seaport, to become a great resort for tourists.



THE PORT OF MONTEVIDEO, URUGUAY.

On account of its geographical location as well as natural advantages the port of Montevideo is considered one of the most important in South America. To improve this naturally fine harbor the Government of Uruguay has already spent something over $15,000,000, and it is estimated that about $4,000,000 more will be expended before the work is entirely completed. In the upper picture may be seen a few of the warehouses and loading cranes erected between moles A and B; the lower picture shows some foreign war vessels paying a friendly visit to the Uruguayan capital in 1910, incident to their participation in the great naval review off Buenos Aires in celebrating the centenary of Argentine independence.

TIMBER RAFTS ON A PARAGUAYAN RIVER.

About half the area of Paraguay consists of dense forests distributed very evenly over the whole country in clumps or patches of wood amongst the grazing lands. In other parts of the world are frequently found large areas of woodland composed entirely of the same kind of timber. In Paraguay, on the contrary, the variety is infinite. Cedar of large size and good quality is found in most of the forests. Rafts constructed of the more buoyant woods carry to market as passengers heavier varieties of timber suitable for cabinet-making. The timber exports of Paraguay for 1914 amounted to $563,143.

Photo by W. V. Alford.

GENERAL VIEW OF BAHIA, BRAZIL.

The city of Bahia takes its name from the splendid bay on which it is located, the full name of which in Portuguese is "Bahia de Todos os Santo," or "bay of All Saints," given it by Amerigo Vespucci, who claimed to have discovered it on All Saints' day, on his second voyage to Brazil. After several vain attempts at colonization, the Portuguese finally effected a permanent settlement in 1549, so Bahia claims to be the oldest city in the country. For about 200 years it was the seat of the colonial government. The city is located partly on a high bluff and partly on the narrow space between the bluff and the bay, so it is divided into the "upper" and "lower" city. Most of the business houses are to be found in the lower section, while the residences, churches, public buildings, etc., are in the upper. Three large elevators serve to transport the population from one section to the other. Bahia is the home of the seedless orange, and it was from there that the United States Agricultural Department secured the first trees of this variety.

the Orinoco from the Atlantic, rolled four days in a native fishing smack to La Guayra, stopped for 10 days in Caracas, the last South American capital, and, sailing via Curacao and Puerto Rico on the last day of August, finally reached Milwaukee four years to an hour from the time of my departure.

During the 1,461 days' journey I slept in 571 different spots, or in other words moved on an average once in every two and a half days. Besides most of Mexico and Central America, I visited every country and colony in South America, and the majority of the States and Provinces of each country. Leaving entirely out of account innumerable side trips and city explorations, I seem roughly to have walked some 5,000 miles, while the distance covered by other means of locomotion is beyond my arithmetic. I have returned from the journey in fully as good health, physically, mentally, and I trust morally, as when I set out, and seem to have suffered only one misfortune, serious and incurable, that of being four years older than the day I started.

The First Winter Ascent of the Aconcagua, by Eilert Sundt, is an account in a recent number of The Standard, of Buenos Aires, of the experience of the author and two companions in an attempt to reach the topmost pinnacle of the "mountain king" of the western world. Having determined to try a winter ascent of Aconcagua, Messrs. Sundt, Bache, and Holm left Buenos Aires about the middle of last September for the little Andean station known as Puente del Inca. They were equipped with a first-class mountaineering outfit just received from Norway, and made their start from the hotel at Inca under very auspicious circumstances. To reach the summit of this great peak has been the ambition of many famous mountain climbers, comparatively few of whom have succeeded, and Mr. Sundt gives the following brief account of previous attempts:

Situated as the Aconcagua is, so comparatively near to the principal trans-Andean route, and with its 23,000 feet, or 7,100 meters, towering above all rivals in the neighborhood, and in fact above all other mountains in the world outside the great Himalayan ranges, its lofty summit being visible from large parts of the Argentine and Chilean Republics, it is only natural that no other mountain of the Andes has acquired such universal fame as has this giant peak.

The first attempt to reach the summit was made by the eminent geologist and plucky mountaineer, Dr. P. Gussfeldt, in February, 1883, when he set out from the Chilean side and reached an altitude of some 6,500 meters, when the late hour of the day and a threatening snowstorm unfortunately forced him to a retreat.

It was not until 14 years later that a new attempt was made, this time by Mr. E. A. Fitzgerald, whose expedition was successful in so far that the highest summit was actually reached by one of his Swiss guides, Mattias Zurbriggen, on the 14th of January, 1897, the ascent being repeated a few weeks later by Mr. Stuart Vines, a member of Fitzgerald's party, with Nicola Lanti, another of the guides of the expedition.

The next climb was that of Sir Martin Conway, in December, 1900, when the summit was reached. Then followed at intervals a couple of unsuccessful attempts, until in February, 1906, the actual summit was again reached by Dr. Helbling, the well-known Swiss climber, his compañero, Dr. Reichert, of La Plata, reaching the summit ridge on the following day. Since then no expeditions to this mountain have been made.

Arrived at the hotel at Inca, final preparations were made and the party, accompanied by two porters to assist in carrying the equip-

ACONCAGUA, MOUNTAIN KING OF THE WESTERN WORLD.

Of this greatest of all Andean peaks, located in Argentina not far from the Chilean border, Mr. Eilert Sundt writes: "Situated as the Aconcagua is, so comparatively near to the principal trans-Andean route, and with its 23,100 feet towering above all rivals in the neighborhood, and in fact above all other mountains in the world outside of the great Himalayan Ranges, its lofty summit being visible from large parts of the Argentine and Chilean Republics, it is only natural that no other mountain of the Andes has acquired such universal fame as has this giant peak."

ment, set out to form their base camp at the foot of the great mountain. The scene of the camp and the start for the summit are described as follows:

We were then at an altitude of some 4,800 meters. Our surroundings were magnificent. The enormous slopes and crags of the mighty Aconcagua right up from our camp to the northeast, the beautiful Cuerno towering up from the Harcones Glacier to the west, and the Harcones Valley downward with its rugged sky line, and the many-colored slopes of the mountains on each side offering the most striking views southeastward.

The weather had been fine so far, but the temperature was rather below what could be termed agreeable, as in turning out of the tent in the early mornings we generally found the mercury standing at 10° to 15° C. below zero.

The first night we spent at this camp was a very exciting one. Early in the afternoon heavy clouds mounted up from the west and soon after snow began falling. Almost at the same time the wind started blowing, and in no time the fiercest hurricane was sweeping down upon us from the heights above, the tremendous gusts swerving round our tent all night through, often seriously threatening to carry it away, although it was very carefully pitched under a huge projecting bowlder with no less than 12 strong ropes.

The storm lasting far into the next day, the party was unable to proceed until the morning following, when it was found that the weather was again perfect. The start was made, the intention being to pitch a second camp at an altitude of about 6,000 meters in which they would spend the night and take a fresh start the following morning for the final dash to the top. The following excerpts from Mr. Sundt's account will give some idea of the difficulties to be encountered in scaling Aconcagua:

Our loads were the lightest possible; light sleeping bags, a small Primus cooking apparatus, and provisions for two days being all we carried with us, besides an anaroid, a maximum and minimum thermometer, and our cameras. A quarter of an hour's walk up the snow slope beginning close to our tent led us to the steep cliffs forming the lower palisade of the great mountain.

A series of couloirs filled with snow led from there up to the platform of the first terrace, from where, northeastward, a vast débris-covered slope leads to the high red cliffs of the second terrace, and to the northwest right up to the final cliffs of the peak itself.

The gully we selected being rather steep and the snow so hard that steps had to be cut now and then, it took us fully two hours before we reached the first platform, where a few steps in the loose débris sufficed to amply confirm the ill fame of this remarkable formation. * * *

Although the débris we now entered upon consisted of stones of a much bigger average size than we should meet on the slope higher up the next day, and therefore not nearly as loose, it was quite bad enough, our loads seeming to weigh many times their actual weight, forcing us to frequent halts for resting and for the reestablishment of our breathing. It was at about this altitude that the rarity of the air began to make itself felt, respiration becoming difficult and each upward movement causing an extraordinary fatigue.

The hours that followed were extremely trying to the whole party. Every step we took we slipped back, sometimes half, sometimes even more than we had originally risen, this constant slipping backward putting us to a terrible state of exasperation.

Photograph by G. K. Gilbert. Courtesy of The National Geographic Society.

"LOS PENITENTES" ON THE ACONCAGUA, ARGENTINA.

This remarkable snow formation seems to be peculiar to certain high mountain regions of Mexico and the Andean ranges of Argentina and Chile. Their formation has sometimes been ascribed to the action of powerful and eddying winds, but Sir Martin Conway, who studied the formations on Aconcagua, gives the following explanation: A thick bed of well-compacted snow, when submitted to the action of the sun, soon becomes pitted over with saucerlike depressions. * * * The hollows, enlarging, ultimately run into one another, leaving rough pyramids of snow standing up between them. These pyramids in the first instance are bounded by concave faces, but the concavities gradually disappear. As soon as their summits have attained to sharpness they present a minimum of surface to the heat, whilst the sun continues to deepen and enlarge the depressions between the spires till the snow is bored away to the ground beneath.

In this way we toiled on for about two hours' time, each man taking his own line of ascent, and all steering for the same point, some big rocks on the second terrace above us, everyone yearning to again get something firm to stand on and to hold to.

About 3 o'clock we reached a small shelf, just below the enormous red palisade forming the southeastern arrete of the mountain, where an excellent camping place was found behind some projecting rocks. The anaroid now marked near to 6,000 meters.

Having no tent, the pitching of the camp was a simple matter of finding the best place to lie down in their sleeping bags. Although a good meal was prepared, the party seemed to have lost their appetites—an effect often produced by the rarity of the atmosphere at great elevations. The porter who had accompanied them up to this point was now permitted to return to the first camp. During the night it seems that Mr. Holm suddenly developed a severe case of mountain sickness, called "puna" in the Andean regions of this section, a disease for which about the only remedy is to seek lower altitudes. For him to proceed was out of the question, so Mr. Sundt and Mr. Bache were left to make the final ascent alone. Their experience is outlined as follows:

The chilliness of the morning was terrible, the thermometer at that hour registering 18° C. below zero, but otherwise the weather was perfect, no wind and a cloudless, starlit sky, a half full moon brilliantly illuminating the impressive surroundings. A short distance from our camp we found a good, long snow slope, which we followed upward as long as it lasted, the condition of the snow allowing us to make a rapid ascent, both of us feeling in very good condition.

We then came upon some rocks, from the top of which a view of the entire upper part of the mountain was obtained, the final cliffs appearing so near to where we were that it seemed impossible that more than a couple of hours should be required to reach them. However, between us and the foot of those cliffs lay the great obstacle to success, a slope of débris, innocent enough in appearance from below but certainly one of the hardest nuts a climber can anywhere be invited to crack.

The débris here consisted of fragments of so small dimensions that it gave way like sand while treading on it, the inclination of the slope being just so steep that the least touch of it sets the whole surface in motion. Apart from the difficulties offered by these tiring slopes the ascent of the Aconcagua is entirely free from other difficulties or dangers from a climber's point of view, the ascent being a mere question of strength and endurance, which is, however, tried to the utmost.

* * * * * * *

The experience of previous climbers, that the ascent of the Aconcagua can only be accomplished by straining to the utmost one's physical and mental endurance, was soon ours. More and more frequent became the halts, 10 steps at a time being about the maximum one could do. Then—as a predecessor has described it—a minute or two with the legs wide apart, the body thrown forward, the hands grasping the head of the ice ax, and the forehead resting low on the hands, and so on again. Sitting down to rest was of no use, as the getting up again felt just as fatiguing as moving upward.

Compared with the débris, the snow slope proved an easy scramble, so at about 10 o'clock we reached the pinnacle forming the northwestern corner of the upper cliffs. At the foot of this we found a perfect cave, where half an hour's halt was made. We would have liked to stay longer, but the cold drove us on.

Here the climb of the final couloir commenced. We found this gully considerably steeper than the slope below, and as the snow at the entrance was hard as ice, steps had

to be cut here and there. Although ice cutting at 22,000 feet is a pretty hard job, it was nothing when compared to the job waiting for us when the snow slope was passed, no débris we had passed on the whole mountain coming near to the débris of the upper part of this gully in slipping capacity. We kept close to the wall of the left side of the gully, where occasionally a firm handhold was found, but each inch upward had to be desperately fought for, the excitement, however, of knowing that only a few hundred feet separated us from the goal of our struggle giving us fresh vigor, so after a couple of hours that felt like ages we at last laid our hands on the steep cliffs that form the northern edge of the summit ridge. Every minute our excitement grew more intense, and surely more attention ought to have been paid to safety when climbing the final rocks, but all went well and at last we peeped over the edge of the wall and obtained the first view of the world on the other side of the great mountain. The summit ridge was reached. But, alas! Could ever a disappointment have been more cruel! An ice-covered wall barred the way to the actual summit!

The difference in height may not have been more than a couple of hundred feet at the utmost, the actual distance separating us from the highest point being probably about the same, so the ascent might well be considered accomplished, as it were; but still our ambition had been to set foot on the very highest point of the summit, to where any of the other gullies would have led us.

* * * * * * *

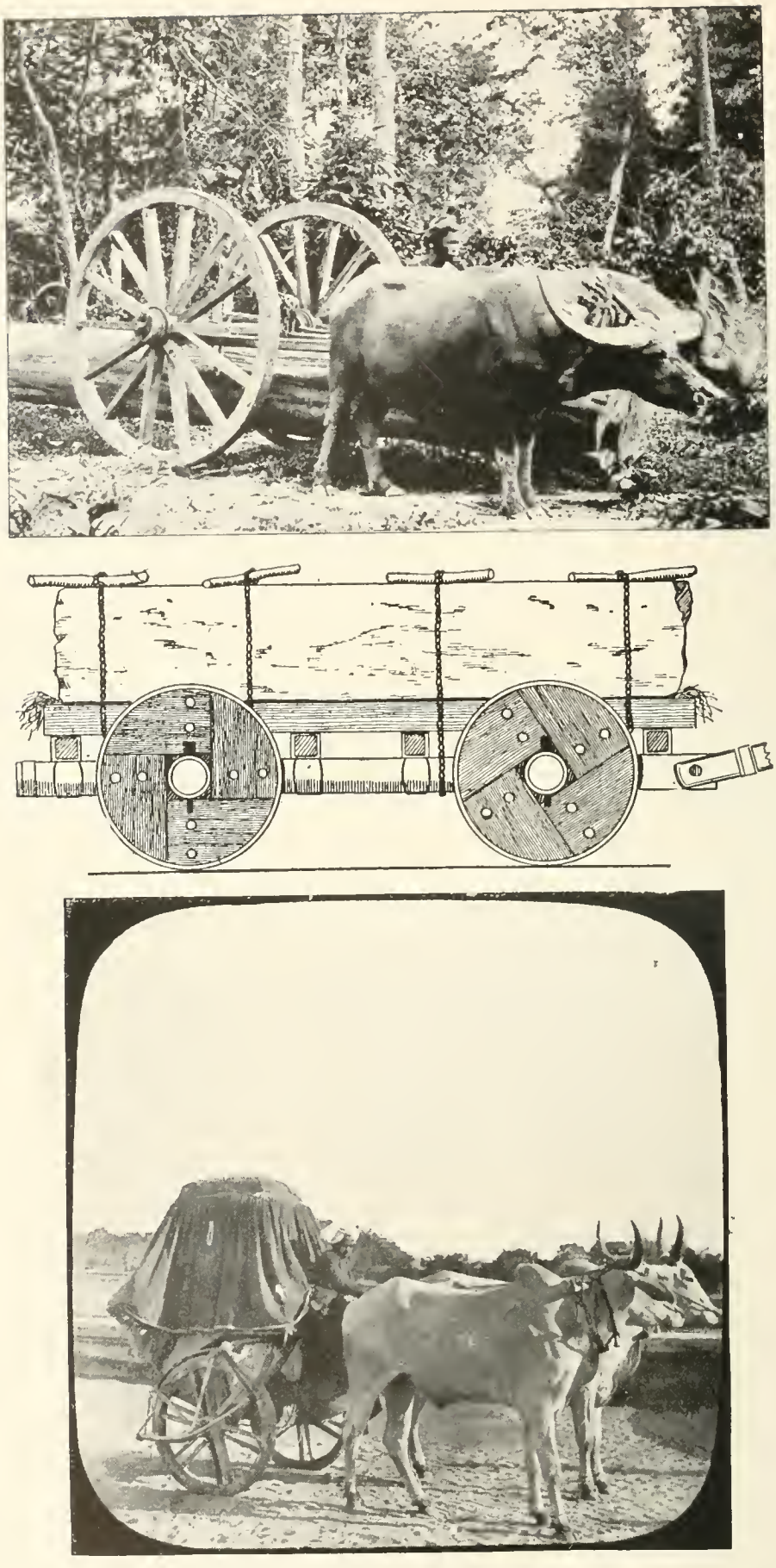
A marvelous panorama was lying before us. Like the waves of an ocean lay mountains and valleys and glaciers in endless succession, glittering in the brilliant sunshine. No day could have been finer for the ascent, a cloudless sky and not the faintest breath of wind. Far to the north the eye was caught by a snow-white mountain of enormous dimensions and of so conspicuous an appearance that the eye was carried back to it again and again. It was the famous Mercedario, in height second to none except the Aconcagua itself. To the west we eagerly sought for the line of the Pacific Ocean, but in that direction earth and sky melted together, so it was impossible to distinguish whether it was really the sea that we saw glittering in the horizon. It was the same to the southeast, where through the breaks of the mountain ranges the Argentine pampas could only be guessed at.

Looking up the wall that separated us from the stoneman on the summit, we came to the conclusion that at that time of the year it would be foolish to try to scale it, as the lower part of it was practically overhanging the great precipice and would require a lot of ice cutting. In summer time it would probably prove a quite easy scramble.

The two adventurous climbers had brought their cameras with them, and after photographing some of the magnificent views reluctantly left the beautiful scenes about them and began the descent, reaching their base camp without further mishap. Although the very topmost tip of the mountain had not been reached, the summit ridge had been mounted and this of itself constituted an achievement in mountain climbing.

The Evolution of the Vehicle (Part II), the second installment of the series of articles appearing in the Spanish edition under that title, is reproduced in an English version as follows:

In the first installment of this article the evolution of the most primitive form of the sledge, the forked limb of a tree, into the well-known vehicle called the chariot was dealt with. This form of conveyance remained the vehicle of war, of state, and of pleasure for perhaps 2,000 years, but for more utilitarian purposes other forms of vehicles had been designed.



THE EVOLUTION OF THE VEHICLE.

Top: In Burma the heavy transportation wagons are drawn by water buffalo. Center: A French conception of the heavy transportation wagon used in the building of the Tower of Babel. Note the primitive form of the wheels. Bottom: In India the women still ride in the primitive two-wheeled vehicle called the "bylee," drawn by oxen.

THE EVOLUTION OF THE VEHICLE.

Upper: A conveyance for the nobility in Japan. The cart is covered and often richly decorated. Lower: The two-wheeled bullock cart is still in daily use in the island of Ceylon.

THE EVOLUTION OF THE VEHICLE.

In Brussels a primitive little cart, drawn by a dog, is still often seen making its rounds in delivering milk, as shown in the upper picture; while in India the "chakla," shown in the lower illustration, is a popular form of conveyance.

The typical chariot was built with only two wheels, but as vehicles for the transportation of goods and heavy materials were designed considerable diversity in form developed. Necessity for hauling heavy loads led to the enlargement of the body of the vehicle which in turn brought about the addition of another pair of wheels, thus bringing the four-wheeled conveyance now known as the wagon into use. Even in the days of the solid wheel a crude form of wagon for transporting heavy materials had been designed, as shown in the accompanying illustration.

In many sections of the world, such as may be found in India, China, Ceylon, Mexico, etc., crude forms of carts on two wheels are still in common use, both as passenger vehicles and as means for heavier transportation. In China centuries ago the monocycle was in great favor. This odd vehicle, much like the modern wheelbarrow, is still in general use in many parts of the country and is propelled by man power. Among the two-wheeled vehicles in popular use in the Asiatic world may be mentioned the "ekka," largely used in northern India, and the famed jinrikisha of Japan.

According to Mr. Carlisle, the name of the latter vehicle is derived from "jin," a man; "riki," strength or power; and "sha," a carriage. Over 40,000 are in use in Tokyo alone. The inventor was a Philadelphian, the Rev. Jonathan Gable, who accompanied Commodore Perry on his expedition to Japan in 1853, when the country was just being opened to the commerce of the world. In 1859 Dr. Gable was requested by Prince Ito to draw the plan of a vehicle that could be used in the imperial park at Yokohama. He took his idea from a London bath chair, substituting a man for the small front wheel. The ordinary jinrickisha costs about $10, but some are luxuriously fitted out and sell for over $100.

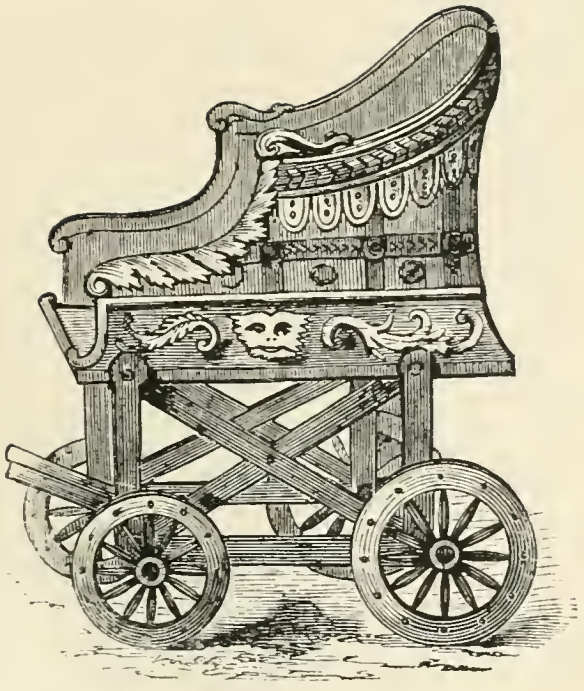
In China and Japan man power is cheapest and is consequently widely utilized. The handcart is used largely for light merchandise delivery. The bullock is used to draw the heavier loads by those who can afford such power; otherwise native laborers are used. Many wealthy Japanese ride in a private conveyance covered and inclosed and richly decorated, shown in the accompanying illustration.

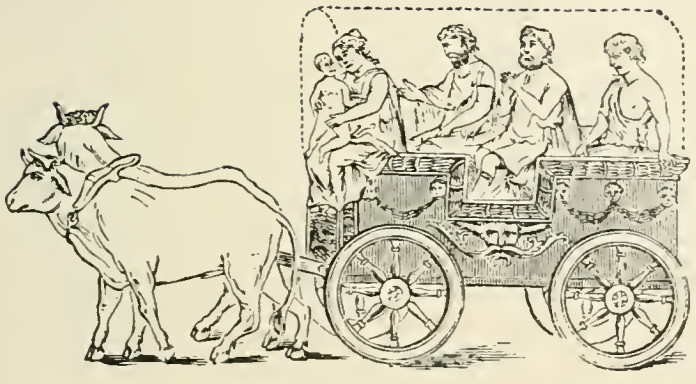
In considering the evolution of the modern vehicle the development of the carriage is perhaps the most interesting phase of the subject. While most of the illustrations used herewith are from Mr. Carlisle's collection, much of the material of the story has been gathered from other sources to supplement the data given in his account.

It was the Romans who first established the use of carriages as a private means of conveyance, and with them these vehicles attained great variety of form as well as richness of ornamentation. In all ages

THE EVOLUTION OF THE VEHICLE.

The two-wheeled cart is still in evidence in many sections of the world. In northern India they use the "ekka," a roughly constructed cart, to which a scrawny pony is usually attached by means of a harness made of ropes and strings, shown in the upper picture. In the lower picture may be seen a typical jaunting car of Ireland.





THE EVOLUTION OF THE VEHICLE.

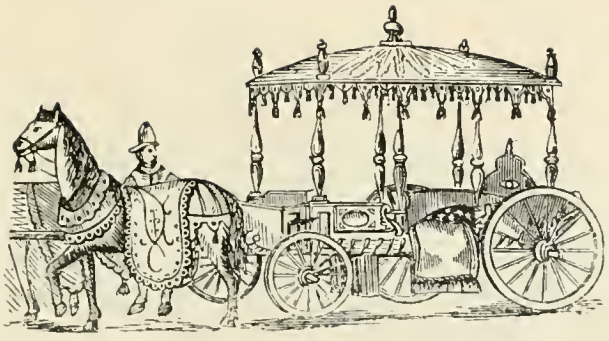
Top: Doubtless such splendid highways as the Appian Way had much to do with transforming the two-wheeled chariot of Rome into the four-wheeled "carruca," used much as a pleasure vehicle and often highly decorated. Center: Before the Christian era the Romans used the four-wheeled "reda" for the conveyance of several persons at a time. Bottom: The famous state coach made for Queen Elizabeth in 1564 by Walter Rippon.

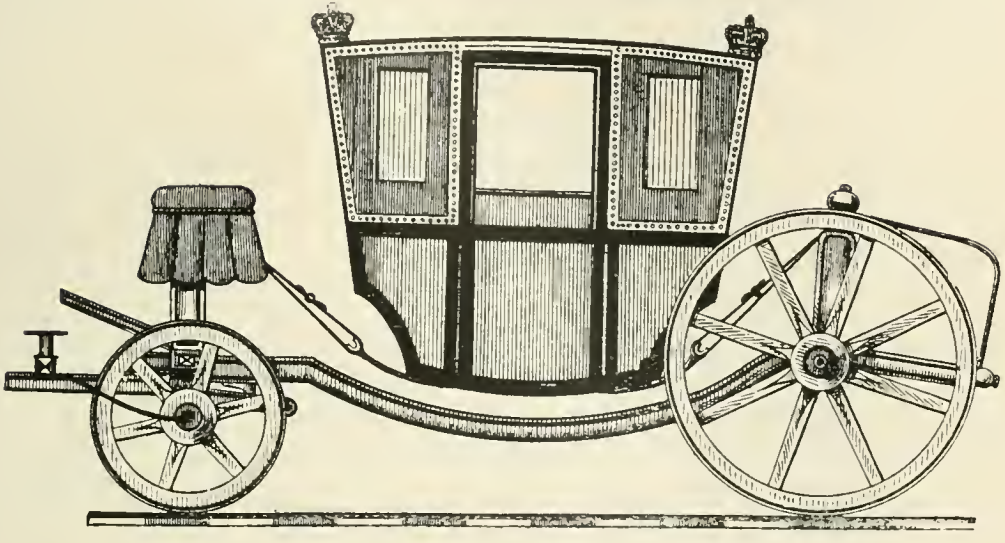
the employment of wheeled vehicles has depended largely upon the condition of the roads on which they were to be used, and the building of great highways, such as the Appian Way by Claudius in 313 B. C., as well as many others, greatly facilitated the development of carriage traveling among the Romans. In Rome, as well as in other large cities of the Empire, it became necessary to restrict traveling in carriages to a few persons of high rank, owing to the narrowness and crowded condition of the streets. For the same reason the transport of goods along the streets was forbidden between sunrise and sunset. For long journeys and to convey parties the "reda" and "carruca" appear to have been mostly used. During the Empire the carriage which appears in pictorial representations of public ceremonials is the "carpentum." It is very light, with two wheels, sometimes covered, and generally drawn by two horses. If a carriage was drawn by four horses they were yoked abreast among the Greeks and Romans, not in pairs as now. From the Roman "carruca" are traced the modern English name "carriage," the French "carrosse," and the Italian "carrozza." The "sirpea" was a very ancient form of vehicle, the body of which was of osier basketwork. It originated with the Gauls, by whom it was named "benna," and was employed by them for the conveyance of persons and goods in times of peace, and baggage and supplies in time of war.

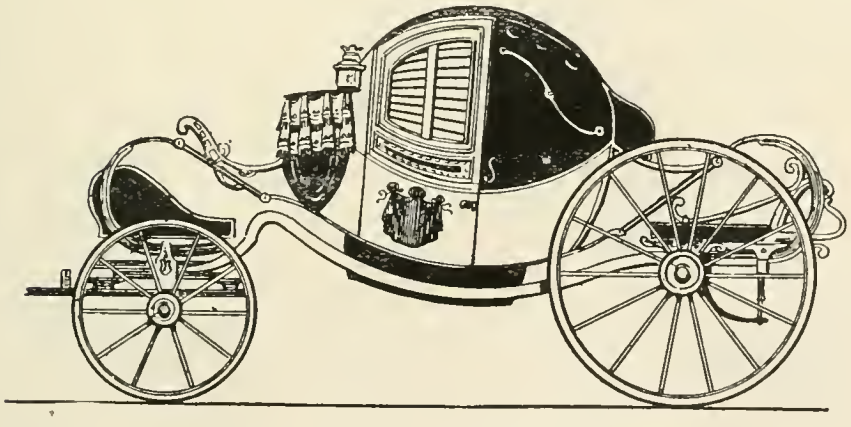
The Roman vehicles were sometimes very splendidly ornamented with gold and precious stones; and covered carriages seem more and more to have become appendages of Roman pomp and magnificence. Sumptuary laws were enacted on account of the public extravagance, but they were little regarded, and were altogether abrogated by Emperor Alexander Severus. Suetonius states that Nero took with him on his travels no less than a thousand carriages.

On the introduction of the feudal system throughout Europe the use of carriages was for some time prohibited, as tending to render the vassals less fit for military service. Men of all grades and professions rode on horses or mules, and sometimes the monks and women on she asses. Horseback was the general mode of traveling; and hence the members of the council, who at the diet and on other occasions were employed as ambassadors, were called "Rittmeister." In this manner also great lords made their public entry into cities.

Covered carriages were known in the beginning of the fifteenth century, but their use was confined to ladies of the first rank, and it was accounted a reproach for men to ride in them. For a long time they were forbidden even to women, but by the end of the fifteenth century they were being employed by kings and princes in long journeys and later on state occasions. In 1474 the Emperor Frederick III visited Frankfort in a closed carriage, and again in the following year in a very magnificent covered carriage. Shortly afterwards carriages







THE EVOLUTION OF THE VEHICLE.

Top: The elaborate state coach of Henry IV of France, still solidly built on the undercarriage. Center: The coach of the time of Charles II, the body suspended by long straps from pillars erected on the undercarriage. Bottom: The elaborate and freakish "coupé cintre" of the First Empire in France.

THE EVOLUTION OF THE VEHICLE.

Top: The famed royal state coach of England, built in 1761 for George III. Center: Carriage of the Earl of Darnley, second husband of Mary Queen of Scots. Bottom: The carriage of the consort of Emperor Matthias, 1611, covered with perfumed leather and otherwise richly ornamented.

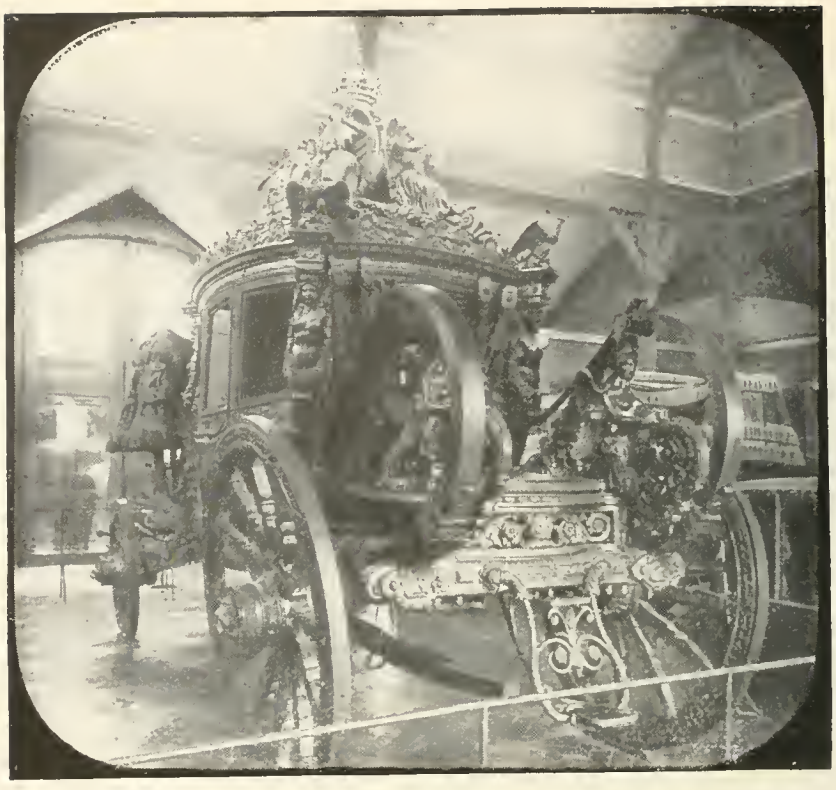
began to be splendidly decorated; that, for instance, of the Electress of Brandenburg at the tournament held at Ruppin in 1509 was gilded all over, and that of the Duchess of Mecklenburg was hung with red satin. When Cardinal Dietrichstein made his entrance into Vienna in 1611, 40 carriages went with him; and in the same year the consort of the Emperor Matthias made her public entrance on the occasion of her marriage in a carriage covered with perfumed leather. The wedding carriage of the first wife of the Emperor Leopold, who was a Spanish princess, cost 38,000 florins. At the magnificent court of the Duke Ernest Augustus at Hanover, in 1681, there were 50 gilt coaches with 6 horses each. The first time that ambassadors appeared in coaches on a public official occasion was at the imperial commission held at Erfurt in 1613. Soon after this coaches became common all over Germany, notwithstanding various orders and admonitions to deter vassals from using them.

Carriages seem to have been used to some extent at quite an early period in France, for there is still extant an ordinance of Philip the Fair, issued in 1294, by which citizens' wives are prohibited from using them. It appears, however, that about 1550 there were only three carriages in Paris—one belonging to the queen, another to Diana of Poitiers, and the third to René de Laval, a very fat nobleman who was unable to ride on horseback. The coaches used in the time of Henry IV were not suspended by straps, an improvement attributed to the time of Louis XIV, though they were provided with a canopy supported by four ornamental pillars, and with curtains of cloth or leather.

The first coach in England was made in 1555 for the Earl of Rutland by Walter Rippon, who also made a coach in 1556 for Queen Mary, and in 1564 a state coach for Queen Elizabeth, perhaps the one that could be opened and closed at will referred to when at Warwick she caused "every part and side of her coach to be opened that all her subjects present might behold her, which most gladly they desired."

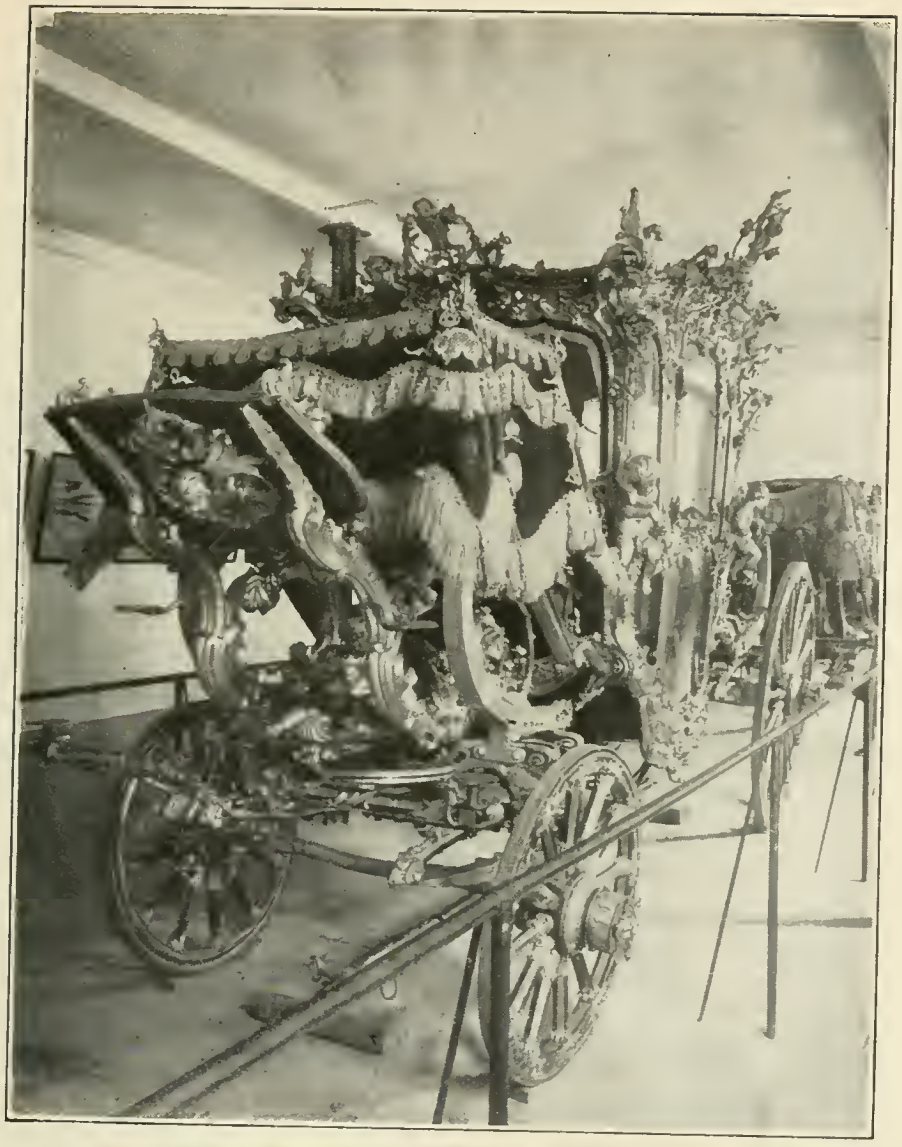
By the beginning of the seventeenth century the use of carriages and coaches had become so prevalent in England that in 1601 the attention of Parliament was drawn to the subject, and a bill "to restrain the excessive use of coaches" was introduced, which, however, was rejected on its second reading. In the early part of the century it was estimated that there were 6,000 in London and its vicinity.

In regard to carriage construction, it would seem that glass windows or hinged and completed doors were unknown prior to 1650. It was during the reign of Louis XIV that the most rapid progress was made, not only in France, but in Germany, Italy, and England as well. There is very little mention by historians of steel springs,



THE EVOLUTION OF THE VEHICLE.

Upper: Coach of Charles X of France. Lower: Coach of the Empress Carlotta, wife of Maximilian, Emperor of Mexico.



THE EVOLUTION OF THE VEHICLE.

Upper: State coach of Maximilian, Emperor of Mexico, who was executed June 19, 1867. Lower: The coach of Napoleon I.

but it seems they were first applied to wheeled vehicles about 1670, prior to which date the bodies were suspended by long straps from the four corners to pillars erected upon the undercarriage. The advantage of springs was speedily recognized as reducing vibration, adding greatly to the comfort of the occupant, and enabling carriages to be built much lighter and lessening the draft for the horses.

The eighteenth century is remarkable for the rapid development of the carriage industry. It was during this period that the manufacture of state carriages of a sumptuous and highly ornate character began in order to satisfy the demand for pomp and display which characterized the various courts of Europe. One of the most beautiful of these is that belonging to the imperial family of Vienna, which was built in 1696, and is shaped with all the curves characteristic of the furniture of the style of Louis XIV. The panels are artistically adorned with nymphs, painted in the style of Rubens, and also with plate glass, while on the center of the roof is a large imperial crown. In 1757 was built the elaborate state coach of the city of London, and in 1761 the royal state coach of England was built for George III.

In the year 1804 Obadiah Elliot patented his plan for hanging vehicles upon elliptical springs, thus dispensing with the heavy wood and iron perch and cross beds generally used in four-wheeled carriages up to that time. He was awarded a gold medal by the Society of Arts of London for his invention.

Public carriages for hire, or hackney coaches, were introduced into London in 1625 and rapidly grew in popularity. Notwithstanding the opposition of the king and court, who thought they would ruin the roads, they grew to number over 300 by 1650. In Paris they were introduced during the minority of Louis XIV by Nicholas Sauvage, who lived in the Rue St. Martin at the sign of St. Fiacre, from which circumstance hackney carriages in Paris have since been called "fiacres." By 1694 there were over 700 of these conveyances in London.

The evolution of the vehicle from the carriage drawn by horses to the automobile and finally into the aeroplane will be the subject of another article.

La Ciudad de Cleveland, Ohio, in a recent number of the Spanish edition of the BULLETIN, is an illustrated article dealing with the metropolis of Ohio, an English version of which is as follows:

Ask the average stranger who visits Cleveland as to his impressions of the city, and in a majority of cases the reply will be that wide streets, the "group system" of public buildings, and the abundance of magnificent shade trees are the most notable features. Streets are of unusual width, while the superabundance of grand old maples and elms have caused Cleveland to become generally known as the Forest City.

STATUE OF MOSES CLEVELAND, THE FOUNDER OF THE CITY.

In 1786 traders began to use the present site of the city as a gathering place; 10 years later the gentleman here represented in marble arrived upon the scene and began to lay out a town in accordance with his instructions from a land company. From those early days the growth of Cleveland has been gradual and substantial. In 1910 it had a population of 560,663.

CLEVELAND CHAMBER OF COMMERCE BUILDING.

In this city the chamber of commerce takes a most important part in all public questions affecting the welfare of the city. The chamber has more than 2,000 members, who come from all leading lines of business, and its recommendations have much to do with the growth and prosperity of the city.

MONUMENTAL PARK;

This park is located in the midst of business activity and is much frequented by tired workers in all lines of activity. It is Cleveland has a 3-cent street car fare (8 tickets for 25 cents), the establishment of which caused much strife between the Monumental Park.

CLEVELAND, OHIO.

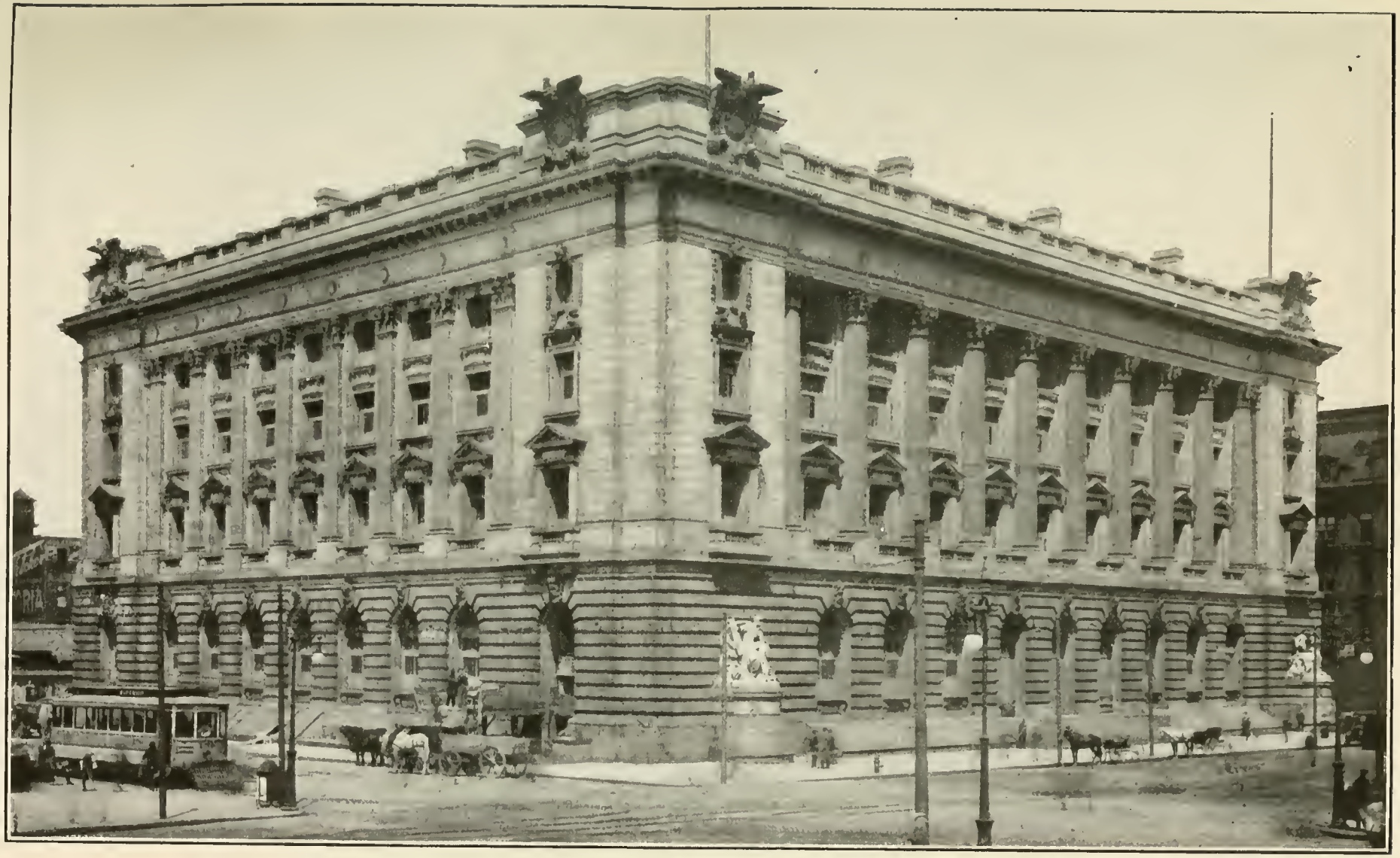
from this square that street car lines radiate to all sections of the city, and the fast electric trains to other cities also start here. railway officials and the municipal government. Beautiful flower beds and attractive grassy plots are special features of

Cleveland is the sixth largest city of the United States. Its location is on Lake Erie, the great body of fresh water which forms the northern boundary of the State of Ohio. Being nearly in line between the two greatest cities of the country, New York and Chicago, from both of which the fastest and finest trains operate, Cleveland has enjoyed a constant stream of travel which has contributed to its wonderful growth.

This stream of travel, together with a constant commercial and industrial growth, have produced a marvelously active business center as well as a most beautiful city. From the shore of Lake Erie the land gradually rises to the southward to a maximum on the eastern suburbs of 200 feet above the waters of the lake, or about 800 feet above the level of the sea. The city occupies an area of 45 square miles; the land is undulating, and here and there a stream winds along beautified shores to its end in the great lake. The largest stream is the Cuyahoga River, which is spanned by several splendid steel bridges. Half a mile southward from the lake's shore is the public square or Monumental Park, forming the center of business activity.

Cleveland had its beginning as early as 1786, when a small trading post was established at the mouth of Cuyahoga River. Ten years later a man by the name of Moses Cleveland laid out the site of a town; he acted on behalf of a land company which had purchased a large section of what was at the time known as the "western reserve." By 1800 this vast area was formed into a county, called Trumbull, and 14 years later the village of Cleveland was incorporated. By 1832 a canal was completed to the Ohio River, and soon the discovery of iron ore west of Cleveland and the working of coal lands in adjoining Eastern States caused the place to be chosen as the logical meeting point of these two important products for shipment by water to the markets of the country. Furthermore, the building of railways from about 1850 to 1860 greatly increased the town's importance and it grew rapidly to cityhood.

By 1836 Cleveland had become a full-fledged city. Its charter, however, has been altered several times, and at present a rather complex form of city government prevails, in which the mayor, the council, the State governor, and a board of public safety have a voice in managing all important municipal matters. Few, if any, cities of the United States are better governed, and this fact, it is said, is due largely to the interest and participation of citizens and trade organizations. The chamber of commerce, for instance, is an organization of 2,000 leading business men which takes an active part in promoting all trade matters, and its recommendations in regard to civic affairs are duly considered by the municipal authorities. This body has



POST OFFICE, CUSTOMHOUSE, AND COURTHOUSE, CLEVELAND.

In this fine building are combined the various offices included under the above names. The city spent $25,000,000 in arranging and building its public edifices according to the "group plan," which necessitated the demolition of many good buildings. This is one of the newer and more conveniently arranged structures.

ROSE BUILDING, CLEVELAND, OHIO.

A typical business edifice in the business center of the city.

from time to time also undertaken to study such problems as overcrowded tenements; secured sanitary reforms; urged and promoted home gardening; fostered playgrounds for children and plubic baths for all citizens, etc., and was largely responsible for the adoption of the group system of buildings.

About 12 years ago the plan to group public buildings went into effect. It cost $25,000,000. The courthouse, in which are housed municipal offices, etc., stands on a bluff overlooking Lake Erie; a thousand feet southward are located the post office and the public library. The street connecting these two groups of buildings is 600 feet wide, and on one side stands the city's great music hall, and opposite is the art gallery. Altogether six large granite buildings form a most important and conspicuous quadrangle of public edifices. In many ways they are unique in plan and arrangement.

Among business interests the arcade plan of construction has been popular, the Colonial Arcade being one of the most notable of this architectural class; it contains many stores, shops, and business offices. The city has many magnificent office structures in the building of which excessive height has been avoided, thereby insuring a more artistic blending of pleasing architecture with the extremely broad and well-shaded streets.

The principal streets radiate from the square known as Monumental Park, the business center. They are from 60 to 132 feet wide, and are paved with Medina dressed stone or asphalt, while special features of beauty are their cleanliness and the magnificent trees shading them in summer, or making the winter's snowfall more attractive and picturesque.

The city of Cleveland owns its waterworks, its electric-light plant, its garbage disposal, and its system of public baths. Indeed, Cleveland has developed municipal ownership further than any city in the country. For obtaining pure water there was constructed a tunnel several miles out into Lake Erie; this is 60 feet below the bottom of the lake. The system gives the city 120,000,000 gallons of filtered water per day; all water passes to consumers at the rate of about 1 cent for 5 barrels, or 40 cents per 1,000 cubic feet. The city garbage plant collects and reduces to fertilizer 200 tons of garbage a day. The sale of the product pays the cost of reduction, and also keeps the city in a most cleanly condition.

There has been considerable controversy over street railway franchises and municipal ownership of public utilities. The result has been that the people enjoy a 3-cent car fare, and the operating company has a long franchise but must sell to the municipality when such ownership becomes desirable to the people.

The commerce of the five Great Lakes is enormous. Cleveland's portion of this trade runs far into millions of tons annually, and in

GARFIELD MEMORIAL AT CLEVELAND.

Within this building repose the remains of a former President of the United States, James A. Garfield, who was assassinated, dying September 19, 1881.

TRINITY CATHEDRAL.

This is one of Cleveland's many handsome church buildings.

building up this trade early attention was directed to harbor improvements. The Federal Government expended vast sums in constructing breakwaters which now inclose an area several miles long and 1,700 feet wide, the main entrance being 700 feet wide and immediately opposite the Cuyahoga River's mouth. A recent 3-mile extension of one of the breakwaters almost doubles the capacity of the harbor, and the water is about 26 feet deep, thus floating the very largest of lake steamers. The improvements of the inner harbor have been made at the expense of the city. The river has been dredged for 6 miles from its mouth, jetties and docks have been constructed along its shores, and as a whole the river furnishes about 14 miles of dock frontage for all classes of steamers, the water being almost as deep as the outer harbor.

As an ore market Cleveland stands ahead of all cities of the world. Its nine trunk lines of railroad entering the city from east, south, and west carry a traffic of enormous proportions. Its railroads contribute largely to manufacturing by bringing thither the raw materials of many varieties. Ohio ranks as the fifth manufacturing State of the country and Cleveland stands at the head of all the cities of the State. The city makes $200,000,000 worth of goods annually, which find a sale in almost every section of the world. In 1905 the value of manufactured goods amounted to $172,115,101, an increase of 36 per cent in five years. Her most important manufactures are iron and steel, carriage hardware, electrical supplies, boilers, bridges, engines, printing presses, agricultural implements, automobiles, telescopes, and many other articles made chiefly of iron.

Cleveland's population has grown as follows: In 1890, 261,353; in 1900, 381,768; in 1910, 560,663. In 1910 there were 47,560 Germans, 18,460 English, 13,579 Bohemians, 13,120 Irish, 9,558 Hungarians, and 7,696 Poles living in Cleveland and identified with its many lines of commercial and industrial enterprise.

Philanthropists have been most liberal to Cleveland. In 1893 a public-spirited citizen gave 122 acres of land along the lake front for a public park, and to-day Gordon Park, so named in honor of the donor, is a most attractive and popular resort at all seasons of the year. From this park there extends for a long distance a fine boulevard to Rockefeller Park, one of the numerous gifts to the city by the famous oil magnate, John D. Rockefeller. Still farther out another park bears the name of Wade; it covers an area of 85 acres, and was donated by the gentleman whose name it bears. Within it is a large lake and a zoological garden, two features that tend to make it most attractive to the younger residents of the city. A small park of 10 acres lies near the business section and affords a popular rendezvous for tired men and women who are employed in commerce and industry about the heart of the city. As a whole the city of Cleveland

WARRENVILLE FARM COLONY.

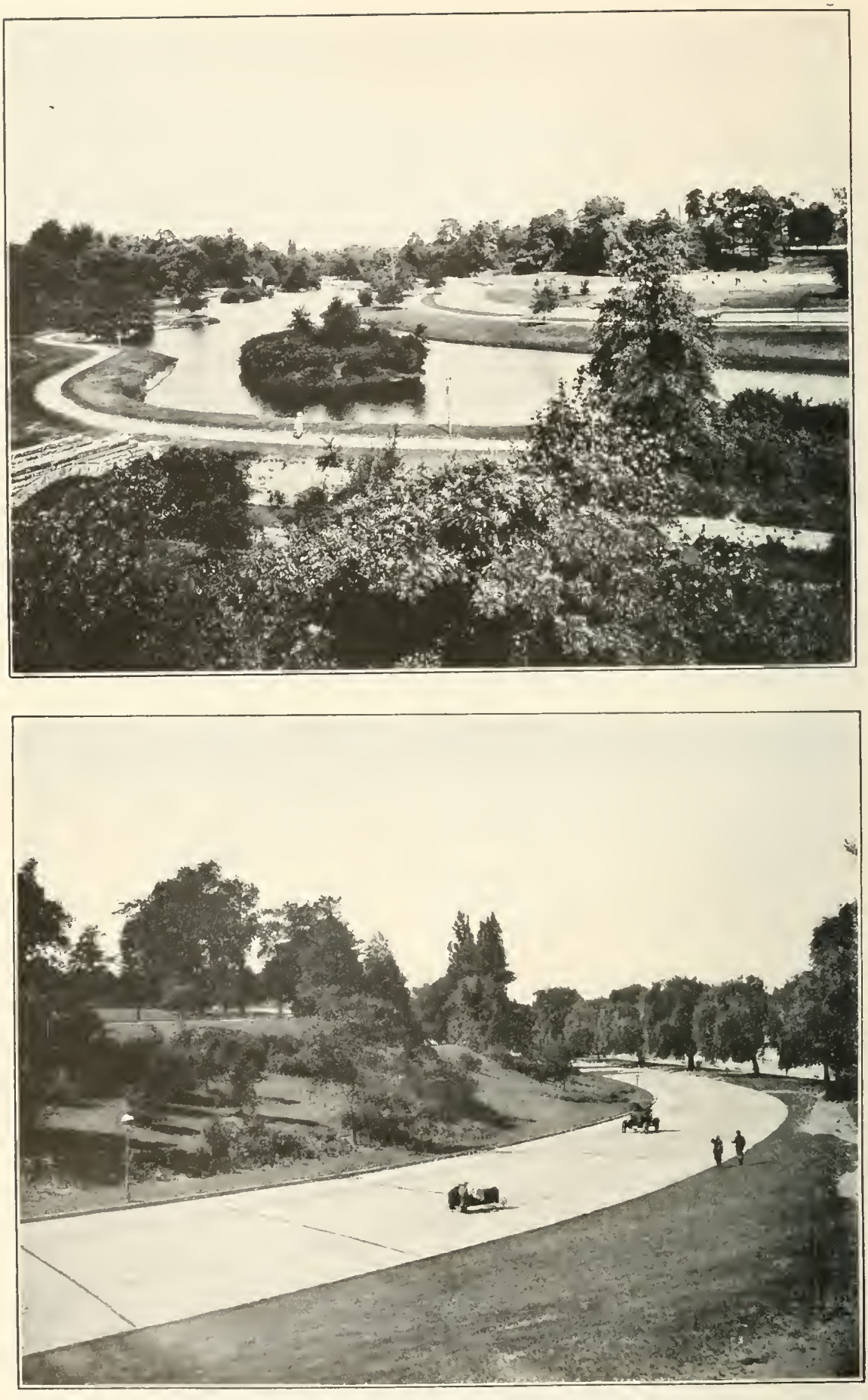
This farm contains 2,000 acres. Within its bounds there have been established Cleveland's correction schools and a tuberculosis sanitarium and infirmary. The group of buildings shown in the picture gives a fair idea of the comfort by which the unfortunate inmates are surrounded.

TYPICAL SCENE ALONG THE CUYAHOGA RIVER.

Cleveland stands first among the ore markets of the world. The various railways bring many thousands of tons annually to its gates, much of which is made into machinery. Lake steamers also carry many tons to other cities.

TECHNICAL HIGH SCHOOL.

This large edifice is typical of the numerous educational institutions that are free to every young person of Cleveland. The city spends more than $2,500,000 annually on public education. There are also colleges that teach all the leading professions, one of the largest being the Western Reserve University, with 200 professors and 1,000 students.



VIEWS OF TWO OF CLEVELAND'S BEAUTIFUL PARKS.

The top picture presents a scene in Gordon Park, a 122-acre section of land bordering on Lake Erie, which was presented to the city by the gentleman whose name it bears. The lower picture gives a view of Rockefeller Park, which was also a present to the people of Cleveland, the donor being John D. Rockefeller, the oil magnate.

has 1,500 acres devoted to public parks, and in most cases these are ornamented in many ways by statues of famous men, splendid driveways, and in summer by a profusion of flowering plants, shrubbery, and trees of the forest just as nature provided.

The educational work of Cleveland is superior in many ways. A system of public-school training called the "Cleveland plan" minimizes school routine and frequent examinations, puts much weight on manual and domestic training, and makes advancement from grammar grades dependent upon the opinion of the teacher, who makes a thorough study of the pupil. The city spends on public education about $2,500,000 annually. In higher education there are a number of excellent colleges, one of the largest being the Western Reserve University, with 200 professors and 1,000 students. There are also special colleges devoted to instruction in law, in medicine, in pharmacy, in engineering, and in practically every branch of the learned professions, as well as in all commercial lines. Charitable institutions, public libraries, reform schools, and many societies devoted to the general welfare of the community are to be counted by hundreds. Newspapers and periodicals of all classes and descriptions are published in the city, and its social advantages have given Cleveland a most enviable reputation.

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED TO FEBRUARY 15, 1916.[1]

Title.	Date.	Author.
ARGENTINA.		
	1915.	
Commerce for the first nine months of 1915	Dec. 1	John S. Calvert, vice consul, Buenos Aires.
Suspension of operations on new port extension work in Buenos Aires.	Dec. 12	Do.
Regarding market for potatoes, apples, and alfalfa hay	Dec. 13	Do.
Report on malt and hops	Dec. 18	Do.
Food specialties, such as dates, figs, coconuts, tapioca, etc	Dec. 31	Do.
	1916.	
Commercial travelers and samples	Jan. 5	Do.
BRAZIL.		
	1915.	
The opening of National City Bank at Sao Paulo	Sept. 6	Maddin Summers, consul, Sao Paulo.
Market for beans; also market for codfish	Nov. 17	Robert Frazer, jr., consul, Bahia.
New commercial building of Pernambuco	Dec. 18	A. T. Haeberle, consul, Pernambuco.
Import and export trade first 9 months, 1915	Dec. 8	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
Receipts of customs house at Rio, January, 1913–November, 1915.	Dec. 14	Do.
Commerce and industries of Rio Grande do Sul	Dec. 18	Do.
American coal in Brazil. Freight situation reviewed	Dec. 21	Do.
Favorable rubber prices	Dec. 31	Do.
	1916.	
Charges other than customs duties on imports	Jan. 6	Do.
The "custom of the port" at Rio	Jan. 8	Do.
Brazilian market for California wines	Jan. 14	Do.
Market for American fruits	Jan. 15	Do.
Increased shipping facilities, Lloyd-Brazileiro Steamship Line	Feb. 15	Do.
CHILE.		
	1915.	
Tesorería Municipal de Magallanes (trade opportunities, municipal loan).	Nov. 18	David J. D. Myers, consul, Punta Arenas.
Cast-iron pipes and fittings	Dec. 6	Thomas W. Voetter, consul, Antofagasta.
Coal consumption	Dec. 7	Do.
Electrical apparatus	Dec. 11	Do.
Rubber boots and shoes	...do...	Do.
Construction of pier in port of Herradura	Dec. 7	L. J. Keena, consul general, Valparaiso.
Telegraph line between Chañaral and Pueblo Hundido	...do...	Do.
Electric-power plant concession for Calbuco	...do...	Do.
Loan for municipality of Concepcion	Dec. 10	Do.
Authorization for loan for paving and repairing streets in Santiago.	Dec. 29	Do.
Coal imports, 1914	Dec. 9	Thomas W. Voetter, consul Antofagasta.
Plans for construction port works postponed	...do...	Do.
Garages	Dec. 10	Do.
Shipping notes	Dec. 16	Do.
Telephone business in Antofagasta and Iquique	Dec. 24	Do.
	1916.	
Annual report for 1914 (first section)	Jan. 10	L. J. Keena, consul general, Valparaiso.
Merger of Chilean brewing interests	Jan. 11	Do.
Voltages in use in district	Jan. 14	Thomas W. Voetter, consul, Antofagasta.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America, but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

Reports received to February 15, 1916—Continued.

Title.	Date.	Author.
COLOMBIA.		
	1915.	
Trade-mark fees in Colombia	Dec. 7	Isaac A. Manning, consul, Barranquilla.
Treatment of commercial travelers and their samples in Colombia	Dec. 18	Do.
Tariff on merchandise received by mail	Dec. 22	Do.
Port improvements in Colombia	...do.....	Do.
Sanitary stations in Colombia	...do.....	Do.
Electric lights for Puerto Colombia	...do.....	Do.
Congressional library for Bogota	...do.....	Do.
Trade directory for Cartagena	Dec. 24	Leonard Blake Modico, vice consul, Cartagena.
	1916.	
Outline of documents, etc	Jan. 18	Isaac A. Manning, consul, Barranquilla.
Packing houses in Colombia	Jan. 20	Do.
New steamship line between New York and Colombian ports	Jan. 25	Leonard Blake Modico, vice consul, Cartagena.
CUBA.		
Report on candy trade in Santiago	Jan. 14	P. Merrill Griffith, consul, Santiago.
Canned goods	Jan. 25	Do.
HAITI.		
	1915.	
Commercial travelers and samples	Dec. 28	J. B. Terres, consul, Port au Prince.
HONDURAS.		
	1916.	
Annual report on commerce and industries for district, 1915	Jan. 1	Walter F. Boyle, consul, Puerto Cortes.
Sugar industry	Jan. 23	Do.
MEXICO.		
	1915.	
Cleaning for white shoes	Dec. 21	Clement S. Edwards, consul, Acapulco.
Annual report of district, 1915	Undated	William E. Alger, consul, Mazatlan.
	1916.	
Annual report, 1915 (first section)	Jan. 11	Gaston Schmutz, consul, Aguascalientes.
Oil report for December, 1915	Jan. 14	Thomas H. Bevan, consul, Tampico.
List of mine owners and railroads in district	Jan. 12	Philip C. Hanna, consul, Monterey.
Notice to oil companies, etc	Jan. 18	Thomas H. Bevan, consul, Tampico.
Annual report declared exports for district, 1915	Jan. 27	William P. Blocker, consul, Piedras Negras.
Report on commerce and industry (first section)	Jan. 29	Philip C. Hanna, consul, Monterey.
Oil shipments for January, 1915	Feb. 5	Thomas H. Bevan, consul, Tampico.
Notice to press relative shipment of munitions of war	Feb. 7	Department of State.
NICARAGUA.		
Dairy industry	Jan. 20	John A. Gamon, consul, Corinto.
PANAMA.		
Increased population of Panama City	Jan. 3	L. A. Clausel, vice consul, Panama.
PARAGUAY.		
Dairy industry	Jan. 15	Samuel H. Wiley, consul, Asuncion.
PERU.		
	1915.	
Imports of marble into Peru, 1913	Dec. 30	William W. Handley, consul general, Callao.
	1916.	
Principal hotels in Peru	Jan. 18	Do.
URUGUAY.		
	1915.	
Law of Dec. 27, 1915, authorizing road construction	Dec. 27	H. F. Arthur Schoenfeld, chargé d'affaires ad interim.
	1916.	
Bill for abolition export tax on jerked beef approved	Jan. 11	Do.

Courtesy of The American Magazine of Art.

STATUE OF JOAN OF ARC RECENTLY ERECTED IN NEW YORK CITY.

In 1912 a committee was formed in New York to provide for the erection of a statue of Joan of Arc in commemoration of the five hundredth anniversary of her birth in 1412. Fifteen equestrian statues have been erected in her honor. Thirteen are in France and one in Philadelphia. The New York statue, which is the work of an American sculptress, Anna Vaughn Hyatt, is prominently placed on Riverside Drive. The foundation stones were taken from the tower of Rouen, in which she was confined. A fragment of a shell-scarred pilaster from the Rheims Cathedral was incorporated in the base. The statue was unveiled with appropriate ceremonies.

Photograph by Underwood & Underwood.

HUGE MEMORIAL TO THE TITANIC VICTIMS SOON TO BE COMPLETED AND UNVEILED AT WASHINGTON, D. C.

The National Memorial Statue to be placed in Potomac Park, Washington, D. C., as the peoples' tribute to those who lost their lives on the ill-fated Titanic is fast nearing completion under the direction of John Horrigan, the Quiney, Mass., sculptor. The figure, designed by Mrs. Harry Payne Whitney, of New York, the designer of the fountain in the patio of the Pan American Union, represents the last inspiration of a departing soul, expressive of the heroic qualities of man and woman. The completed figure will weigh 25 tons and has been cut from a red granite block nearly double that weight, from the quarries of Westerly, R. I. The size of the statue may be judged from the fact that the span of the arms, from tip to tip, is 15 feet. The statue will stand on a pedestal 12 feet square and 10 feet high. The cost of the monument, $40,000, was raised by public subscription.

Courtesy of American Forestry.

YELLOW POPLAR AS A VENEER.

Here is shown a particularly fine specimen of rotary cut yellow poplar veneer, $\frac{1}{8}$ of an inch thick, 10 feet wide, and 30 feet long. It is to be used as a ceiling panel for an electric street railway car.

ARGENTINE REPUBLIC

An official estimate of LIVE STOCK in the Argentine Republic on December 31, 1915, is as follows: Horned cattle, 29,500,000 head; horses, 9,700,000; mules, 580,000; asses, 340,000; sheep, 80,000,000; goats, 4,520,000; and hogs, 3,050,000. The packing and slaughter houses of the Republic in 1914 required for their plants 820,000 yearlings, 990,000 cows, 225,000 calves, and 1,600,000 wethers.——DEMOGRAPHIC STATISTICS of the city of Buenos Aires show that from January to October, 1915, there were 38,205 births, 19,393 deaths, and 9,262 marriages. Due to the excellent sanitary condition of the Federal district, the death rate in Buenos Aires decreased from 18.8 per thousand in 1903 to 15.8 per thousand 10 years thereafter.——During the first 10 months of 1915 there were consumed in the metropolis of the Argentine Republic 13,723,642 dozen EGGS, or an approximate daily consumption of 451,177 eggs.——In 1915 the attendance in the primary day SCHOOLS of the city of Buenos Aires was 147,592 pupils and 12,060 in the primary night schools.——The governor of the Province of Cordoba has contracted for the construction of a new MUSEUM on Centenary Square, in the city of Cordoba.——The number of metric tons of CEREALS exported from the Argentine Republic in 1915 were as follows: Wheat, 2,448,724; corn, 4,331,311; flaxseed, 995,090; oats, 591,212; barley, 75,946; and alpiste or birdseed, 5,608.——The Province of Mendoza has 70,099 hectares of VINEYARDS, 56,321 hectares of which are in full production. The approximate annual grape yield of this Province is 16,500,000 quintals, or enough to produce 5,500,000 hectoliters of wine.——The place in the city of Buenos Aires where the house formerly stood in which the Argentine patriot GEN. BARTOLOMÉ MITRE was born has been marked by a commemorative tablet.——By order of the minister of foreign relations of the Argentine Government, Sr. Don Enrique J. Amaya has been transferred from the department of foreign relations in Buenos Aires to the Argentine Embassy in Washington in the capacity of SECOND SECRETARY OF THE EMBASSY.——Mrs. Margarita Uriburu de Ibarguren has donated to the Ramos Mejía Hospital, in Buenos Aires, the LIBRARY, apparatus, and surgical instruments of her deceased husband, Dr. Antonio Ibarguren.——The completion of the bridge over the tracks of the Southern Railway at Ringulet station opens to traffic the RAILWAY from La Plata to Avallaneda.——The Argentine Government has for a considerable time given special attention to the construction of GRAIN ELEVATORS, the storage capacity of which is at the present time 5,708,797 metric tons, or the equivalent of

about 90 per cent of the total cereal production of the country.——The third dispensary of the Argentine League for the PREVENTION OF TUBERCULOSIS was opened for service in the metropolis of the Republic on December 31, 1915.——During the first 10 months of the past year, 5,677 HOUSES were built in Buenos Aires on ground covering an area of 434,277 square meters.——The Walker Construction Co., of Buenos Aires, has notified the department of public works that London banking firms are willing to advance up to 100,000 gold pesos (gold peso = $0.9648) per month to be expended on the PORT WORKS of the national capital. The proposal is under consideration, and according to press reports will probably be accepted by the Government, in which case construction work which has been suspended for some time, will be renewed at once.——The proposed BUDGET of the Argentine Government for 1916 shows expenditures aggregating 342,859,738 pesos national currency (paper peso = $0.425).——The executive committee of the FIRST NATIONAL CONGRESS OF MEDICINE is composed of the following physicians: Pedro Belou, president; Justo V. Garat, vice president; Carlos S. Cometto, secretary and treasurer; members, Enrique Abella, Angel A. Alsina, Vicente Centurion, Fernando Malenchini, Pedro Goenaga, Domingo Arósteguy, Juan Francisco, Fernandez Antonio Padin, and Enrique Herrero Ducloux.——The following foreign STEAMERS AND SAILING VESSELS entered and cleared from the port of Buenos Aires in 1915: 1,386 foreign steamers, representing a total tonnage of 3,868,534, and 119 foreign sailing vessels, with a registered tonnage of 155,595, cleared. There were engaged in the coastwise trade during the period referred to 4,321 steamers and 6,562 sailing vessels, the tonnage of which was, respectively, 3,120,720 and 932,369.——A recent Executive decree prescribes that the director of the bureau of irrigation of the Argentine Government formulate an agreement with the Southern Railway, to be submitted to the President of the Republic, for continuing work on the Rio Negro IRRIGATION project. A report made by the irrigation bureau some time ago stated that £800,000, the estimated cost of this work, was insufficient to complete the undertaking, and recommended as necessary for its termination an additional amount of £270,000. The project covers the irrigation of 65,000 hectares of land in the Rio Negro Valley.

BOLIVIA

According to El Diario, a daily newspaper of La Paz, more than 30 members of the House of Deputies desire a SPECIAL SESSION OF CONGRESS for the purpose of authorizing the President to

grant concessions for the establishment of smelters upon conditions favorable to the development of the mining interests of the country, as well as to enable him to negotiate a loan of £1,500,000, £1,000,000 of which it is proposed to use in building the Sucre Railway, and £500,000 for the construction of an electric tramway to Yungas.——President Ismael Montes has recently appointed the following CABINET: Victor E. Sanjinés, minister of foreign relations and worship; Arturo Molina Campero, minister of home government and fomento; José Gutiérrez Guerra, minister of finance; Ismael Vasquez, minister of justice and industry; Luis Salinas Vega, minister of public instruction and agriculture; and Gen. Fermín Prudencio, minister of war and colonization.——A provisional WIRELESS telegraph station, capable of communicating with Riberalta, has been installed in the tower of the legislative palace in La Paz, and is to be made permanent if the service proves satisfactory.——Bolivia Actual (Bolivia To-day) is the title of a FORTNIGHTLY MAGAZINE in English and Spanish, edited in La Paz by Waldo Alborta. The object of the publication is to encourage the development of commerce and industry in the Republic.——The Bolivian Government has requested bids for a new issue of POSTAGE STAMPS for 1916, the war preventing the receipt of the usual supply from Europe.——It is estimated that Bolivia uses annually for industrial purposes 4,750,000 liters of ALCOHOL, and that after the completion of the Tupiza to Quiaca railway most of the imported product will come from the Argentine Republic.——An executive decree of December 23, 1915, imposes a tax of 1 boliviano ($0.3893) per metric quintal on foreign and domestic merchandise intended for consumption in the departments of Chuquisaca and Potosi, the proceeds of the tax to be used in the construction of the POTOSI-SUCRE RAILWAY. The Senate of Bolivia has approved the José Pino concession for the COLONIZATION of 500,000 hectares of land in the Bolivian Chaco. The lands are to be used in the cultivation of rice, cotton, hemp, and other staple products.——Work has been commenced, under the direction of the State telegraph department of the Government, on a WIRELESS station at Viacha.——A free SCHOOL of social science has been established in La Paz.——Veins of WOLFRAM have recently been discovered in the vicinity of Guaqui, near Lake Titicaca, not far from the railroad leading to La Paz. Steps have been taken looking to the exploitation of the same.——The National Institute of Bacteriology in La Paz has recently successfully manufactured diptheria and typhoid SERUMS, the supply of these having been cut off by the European war.——The MORATORIUM law has been extended until June 30, 1916.——The profits of the NATIONAL BANK of Bolivia in 1915 were 60,000 bolivianos (1 boliviano = $0.3893).——The MUNICIPAL

COUNCIL of La Paz has elected the following officers for 1916: José G. Villanueva, president; Manuel Andrade, vice president; and Gregorio Almaraz, secretary.

BRAZIL

Arrangements have been made for the holding of a COTTON CONFERENCE in Rio de Janeiro at the beginning of May of the present year. During the last five years great development has taken place in Brazil in the cultivation of cotton, the bulk of which is produced in the northeastern coastal States of the country, although it can be commercially grown below Parana or in the Amazon Valley. The increase in the cultivated area of cotton has taken place largely in districts within easy transportation reach of the great cotton mills of the Republic. Ceara, due to its fine climate and moderate rainfall, is one of the States best adapted to cotton growing. A few years ago, in order to encourage this industry, some of the Brazilian States—Minas, for example—offered a subsidy for each 50,000 arrobas of cotton grown from selected seed furnished by the State Government, but required that modern machinery be used in its cultivation and that an area of not less than 400 hectares of land be exclusively devoted to that purpose. This State also offered a subsidy to the first cottonseed oil factory established within its borders, the minimum production to be not less than 100,000 liters of oil. In addition to the large amount of capital represented in the cultivation of cotton, it is estimated that one-third of the industrial capital of the country is invested in cotton mills.——The Continental Products Co. has planned to establish a large REFRIGERATING PLANT, equipped in the most up-to-date manner, at Pelotas, in the State of Rio Grande do Sul. The management of the enterprise states that within a short while the meat-packing and cold-storage plants of Brazil will be in a position to make monthly exports of 6,000,000 kilos of frozen meat.——The Bank of Brazil has been authorized by the Federal Government to lend 10,000 contos (gold conto = $546) to the Mortgage Bank of Sao Paulo to be used in aiding COFFEE growers in marketing and maintaining the price of their crop.——A law has been enacted fixing the LAND AND NAVAL FORCES of the Republic during the present year at 34,098 men.——A large plant for the manufacture of PRINTING PAPER is soon to be put in operation at Jabotao, State of Pernambuco, by a Norwegian-Brazilian syndicate with a capital of 6,000 contos. It is reported that this establishment will be the largest paper factory in South America.——In 1915 the department of agriculture of the Government of Brazil distributed to agricul-

turists nearly 80 tons of carefully selected grain and garden SEEDS.——The Italian Government recently purchased in the State of Rio Grande do Sul 1,000,000 RAILROAD TIES.—A conference is planned to be held in Rio de Janeiro in May next to adjust the FREIGHT TRANSPORTATION tariffs charged agriculturists and exporters. This conference will endeavor to establish rates just and satisfactory to all the parties in interest.——A law has been enacted authorizing the President of the Republic to open CREDITS in favor of certain governmental departments, to the amount of 50,000,000 milreis (1 milreis paper = $0.25), the funds to be used for the following purposes: Assistance to persons affected by the drought in northern Brazil; land, sea, and railway transportation; settlement of labor disputes; public works in the drought zone of northern Brazil, including highway and railroad construction and the extension of existing railroads.

CHILE

The second CABINET formed by President Sanfuentes consists of the following members: Maximiliano Ibañez, secretary of interior; Ramon Subercaseaux, secretary of foreign relations; Armando Quesada Acharán, secretary of finance; Cornelio Saavedra, secretary of war and marine: Roberto Sánchez G. de la H., secretary of justice and public instruction, and Angel Guarello, secretary of industry and public works.——The Governments of the Argentine Republic, Brazil, and the United States have manifested their intention to participate in the Chilean AREONAUTIC CONFERENCE, the inaugural session of which is to be held in Santiago on March 11, 1916, under the auspices of the Aero Club of Chile, the headquarters of which are in the national capital. In addition to the delegates of the countries mentioned, the Chilean Army will be represented by a delegation of experts selected from members of its aviation corps.——The Chilean Government has established CONSULATES at Ann Harbor, Mich., and Lucerne, Switzerland, and the chief executive has appointed Ernesto Guzmán Donoso and Alejandro Eguiguren, respectively, to fill these posts.——The bureau of statistics of the Government of Chile has compiled figures showing that in 1915 the AGRICULTURAL PRODUCTION, in metric quintals, of wheat, barley, oats, corn, beans, and potatoes was, respectively, as follows: 5,171,545; 816,441; 1,031,230; 462,819; 510,668; and 2,580,491.——In 1915 there were 9,476 kilometers of RAILWAYS in operation in the Republic, and the estimated value of the lines belonging to the State is $150,000,000. The railways planned and

under construction during the year referred to represent a length, in round numbers, of 4,000 kilometers. When the Northern Longitudinal Railway is completed between Pisagua and Tacna, the State railways of Chile will extend in a continuous line over a distance of more than 3,300 kilometers.——The council of state of the Government of Chile has approved a bill introduced into Congress prescribing that the LAND AND MARITIME FORCES of the Republic for 1916 shall not exceed 26,308 men, 8,284 of whom belong to the permanent army, 6,000 to the fleet, 9,000 army recruits, 350 navy recruits, 737 to the coast artillery, and 1,935 to the rifle corps.——According to press reports the Chilean minister in London has arranged for reduced transportation rates to Great Britain, during the next nine months, on 80,000 tons of CEREALS. An agreement is also reported to have been made which reserves 70 per cent of the space on the principal English steamers, which ply between Chile and Great Britain, for use in the exportation of Chilean products.——The Government of Chile has authorized the National City BANK of New York to establish branches in Santiago, Valparaiso, Antofagasta, Iquique, and other cities of the Republic. The New Italian Bank has also been organized in Santiago with a capital of 10,000,000 pesos currency.——The MINING SCHOOL at La Serena, Province of Coquimbo, has been placed under the direction of Frederico A. Muñoz, and provisions made for the continuance of its activities.

COLOMBIA

The National Congress recently enacted a law, intended to develop the agriculture of the country, which provides for the establishment of AGRONOMIC STATIONS in such parts of the Republic as the Government may, after consultation with agricultural engineers, deem expedient. In each of the stations, agricultural investigations, such as experiments and demonstrations, application of chemical fertilizers, cultivation and acclimation of plants, will be carried on and exhibits will be made of modern agricultural instruments and tools. Each station will maintain a special agricultural meteorological bureau, and be equipped for the study of insects injurious to plants, for analyses of soils and waters, and for the importation and distribution of seeds, plants, fertilizers, and fine animals for breeding purposes. A monthly bulletin entitled "The Colombian Agriculturist" will be the official organ of these stations. The law also provides for the establishment of an agricultural library in the national capital. ——A NATIONAL WAREHOUSE of stationery, furniture, tools,

and other merchandise currently used in public offices and national works, has been established by Congress. This warehouse will be organized and operated under the direction of the department of public works.——In 1915 there were 4,219 PRIMARY SCHOOLS in operation in the Republic with an enrollment of 295,872 pupils. The Departments of Antioquia and Caldas had the highest percentages of attendance.——An AUTOMOBILE SERVICE has been established between the city of Magangue and the town of Buena Vista, district of Since, Department of Bolivar.——The NATIONAL REVENUES in 1915, according to statistics compiled by the treasury department, amounted to $11,344,485.——The centenary of the death of nine Colombian patriots who were executed by the Spanish authorities after the siege of Cartagena on February 24, 1816, was duly observed in that city by the holding of an exposition of the raw and manufactured products of the country. Among these were numerous samples of crude rubber from different sections. One sample, which weighed 1,120 pounds, came from the rubber plantations of Choco, where, according to recent estimates, there are 80,000 full grown trees yet untapped.——A strong financial company has been organized at Cucuta, capital of the Department of North Santander, for the development of the TOBACCO industry of that vicinity.——During the latter part of January, 1916, the first ship of the COLOMBIAN MARITIME NAVIGATION CO. of New York, a corporation organized to operate a line of vessels between the Atlantic ports of the United States and the ports of northern Colombia, visited the Republic.——By order of the Colombian authorities, the COASTWISE trade of that country must, in future, be carried in national vessels in accordance with the rules and regulations issued by the treasury department.——The Government has ruled that LIGHTHOUSE TAXES shall be collected as follows: At the rate of $0.05 for each of the first 100 tons of ship's registry, and $0.025 for each additional ton. Port ballast taxes shall be charged for at the rate of $0.50 per ton.——Diego Martinez & Co. have established an AUTO OMNIBUS service in Cartagena.——The first RAILWAY DRAWBRIDGE constructed in Colombia was opened on January 10 to public traffic by the Pacific Railway Co. The bridge spans the Cauca River and is used for the passage of trains between Cali and Palmira.——Construction work has been commenced at Tunja on the large EXPOSITION BUILDINGS to be erected by the Government for the celebration of the centenary of the Battle of Boyaca, which engagement insured the independence of Colombia.——On January 1, 1916, was laid the cornerstone of the MONUMENT which is being erected in Independence Park in the national capital, in honor of Dr. Manuel Murillo Toro, an eminent Colombian statesman and twice President of the Republic.——The CUSTOMS REGULATIONS for 1915 habili-

tate for import and export business, the Atlantic ports of Tucacas, Riohacha, Santa Marta, Puerto Colombia, and Puerto Cesar, and the Pacific ports of Tumaco and Buenaventura. The Atlantic ports of Cispata and Cobenas are habilitated for export business, as are the fluvial ports of Orocue, Yabarate, and Port Cordoba, and the inland ports of Cucuta and Ipiales.

COSTA RICA

The BUDGET of Costa Rica for the fiscal year 1916 has been fixed by Congress at 7,759,200 colones (colon = $0.4653). The estimated receipts are 7,563,000 colones, made up of the following items: Customs revenues, 3,500,000; liquor taxes, 2,200,000; Pacific Railway, 772,000; posts and telegraphs, 400,000; sealed paper and stamps, 300,000; export tax on bananas, 200,000; and other revenues, 164,000 colones. The President is authorized to cover the deficit by using the credit of the State in borrowing from the International Bank.——An executive decree of January 3, 1916, requires domestic BANKS and branches of foreign banks doing business in the Republic, as well as money lenders, to pay into the national treasury 1 per cent of their annual net profits as shown by their books, payment to be made in the case of banks within eight days after their balance sheets have been approved, but money lenders must make this payment on December 31 of each year.——The recent law imposing a tax on BREWERIES requires them to place a label and stamp on each half and full sized bottle of beer prepared for sale, in compliance with the provisions of law No. 58 of August 16, 1915. A statement of sales of beer in kegs or barrels, accompanied with the amount of the tax, must be made weekly to the main tax collection office of the Government.——The Mutual TRAMWAY AID SOCIETY of San Jose completed its third year on December 31, 1915. The receipts of the organization during the period referred to were 4,550 colones, and the expenditures for relief work, medicines, medical aid, etc., amounted to 2,923 colones. The net assets at the beginning of the present year were, therefore, 1,627 colones. The society has enrolled at the present time 87 members of the street railway force.——The concession granted the National PETROLEUM Co. will expire in April of the present year. Congress, which meets in May next, will doubtless take up the matter, and will confirm, modify, or reject the concession, which has already been approved by the President, as it may deem best for the interests of the country. The petroleum zone of Costa Rica is near the Panama Canal, and if oil of the right grade and in sufficient quantity exists in this

region, a large and ever increasing market is close at hand, and the development of the industry rapidly and to a very high degree is assured.——Spanish subjects residing in San Jose have organized a SCHOOL for Spanish children. A special feature of this school will be the teaching of Spanish history and geography. For the present, sessions will be held in the Spanish casino by courtesy of the directors of that institution.——A North American company with headquarters in California is investigating the vicinity of Golfo Dulce with the object of forming an AGRICULTURAL SETTLEMENT there, provided the Congress of Costa Rica will grant the necessary concession. According to press reports the representative of the enterprise states that there are 100 families of agriculturists of moderate means in California who are ready to settle in the zone referred to, and that other colonists will follow if satisfactory arrangements are made with the Costa Rican Government.——Miguel Montealegre, a Costa Rican electrician educated in the United States, has begun work on a WIRELESS installation, to be operated from San Jose, of a power sufficient to communicate with the ports of Limon and Colon.

CUBA

President Menocal signed on the 10th of the present month a decree appointing a commission to prepare and submit a report within the next six months of a plan for the NATIONALIZATION OF THE RAILWAYS of the island. The executive states that the present system of railways is costing the Cuban Government annually over $300.000 for carrying the mails and more than $200,000 for transporting officers and troops. The decree sets forth that the railways, by raising freight rates, have injured the agricultural interests of the Republic, are unable to handle the volume of traffic offered them, and that the management has entered into numerous controversies with patrons of the lines. In order to investigate the subject the President has appointed a commission consisting of the following members: Secretary of the interior (gobernaciön), chairman, secretary of justice, secretary of finance, assistant secretary of state, a civil engineer, a banker, a financier, and two railway experts.——The city council of Habana has voted a subsidy of $40,000 to the Brocale OPERA COMPANY, which is playing during the present month at the National Theater. The resolution requires the approval of the mayor before becoming operative.——The Ward Line has under construction two large STEAMERS to be used between New York and Habana. One of these will be called *Niagara*

and will have a capacity of 16,000 tons.——On February 25 a NATIONAL EXPOSITION OF PAINTINGS, the work of Cuban artists, was opened in Habana in the hall of the Academy of Science by the President of the Republic.——The secretary of public sanitation of the Cuban Government has requested the national board of health to report upon and recommend a plan for regulating the sale of ALCOHOLIC BEVERAGES throughout the country.——Sr. Ramon Pio Ajuria, a brother of the senator of the same name, has been appointed MINISTER of Cuba in Mexico.——A memorial tablet has been placed over the doorway of the house at No. 48 Luz Street, Habana, in which the lamented Cuban patriot, diplomat, author, and statesman, and one-time minister of Cuba in Washington, GONZALO DE QUESADA Y ARÓSTEGUI, was born.——Two months exploration work has just been commenced on the Bayamo COPPER MINES, situated about 34 kilometers from the city of Santiago. In addition to the copper mines of the Province of Santiago, it is estimated that the iron mines of that Province have deposits containing 3,000 million tons of ore. Considerable activity is noted in mining circles, and an effort is being made to modify the mining laws, a bill for that purpose having been introduced into Congress on December 20 last.——The FIRE DEPARTMENT of the city of Habana has been reorganized. The entire force is under the direction of a first and second chief, with monthly salaries of $300 and $200, respectively. An army officer will be employed to give instruction in discipline and drill. The force comprises 4 brigade chiefs, 12 assistants, and 84 firemen.——Work has been commenced on the Guantanamo HYDROELECTRIC PLANT, which is expected to be completed and open to service by the end of 1916.——La Voz del Pueblo (The Voice of the People) is the name of a new semiweekly NEWSPAPER established in Gibara by José Martin Diaz.

DOMINICAN REPUBLIC

The board of agriculture of the Government of the Dominican Republic has met a number of times during the past few months to consider the installation of a TOBACCO EXPERIMENTAL STATION in the Republic. For a number of years Prof. Michels, an able and practical Dominican agronomist, has been experimenting with the cultivation of tobacco in different parts of the country. This gentleman has obtained seed of the best varieties of Cuban and Porto Rican tobacco, and during the latter part of 1915, in cooperation with the agricultural board, enlisted the aid of a number of the most intelligent of the small tobacco growers of the country, supplied them with seed, and gave them instructions concerning the planting, culti-

vation, harvesting, and curing of the crop. The result of this method so far has been most satisfactory, and there is every reason to believe that the experiment will be successful and profitable. As soon as this tobacco is ready for marketing, arrangements have been made to furnish samples to the board of trade of the city of Santo Domingo, which will send them to the most favorable markets and obtain prices on the output. The present tobacco-growing season of the Dominican Republic is now too far advanced to allow the ground to be put in order for plantings at the experimental station, but preparations have been made to utilize for the next planting season well-selected new ground, properly cleared and put in such condition that everything will be favorable to the production of a grade of tobacco that will command the highest prices in the markets of the world. The European war has interfered to a considerable extent in the marketing of Dominican tobacco. Recently, however, dealers from Spain have become interested in the crop grown in Cibao and other parts of the country, and negotiations are under way which promise to result in the sale of large quantities of Dominican tobacco in entirely new markets.——The LIGHTHOUSE at Cabo Samana has been supplied with a light visible, under favorable weather conditions, for a distance of 10 miles.——According to press reports the NATIONAL HIGHWAY between the Federal capital and San Pedro de Macoris has been put in first-class condition and will soon be open throughout its entire extent to public traffic. Steps have also been taken to improve and repair the wagon road between the city of Santiago de los Caballeros and the Province of Monte Christy.——Congress has enacted a law extending the time in which LANDOWNERS are required to register their holdings until December 1, 1917. Notaries who do not register deeds left in their care before the date specified are subject to fines of $100 for each infraction of the law, and owners who fail to register their deeds will be fined 50 per cent of the value of their holdings.——A well-equipped ACADEMY, under the name of Professional Institute of Cibao, was inaugurated in the city of Santiago in January last under the rectorship of Dr. Genaro Pérez.——The Province of La Vega has taken preliminary steps toward the erection of a bronze STATUE of Juan Pablo Duarte, founder of the Republic.

ECUADOR

The President of the Republic recently promulgated rules and regulations, effective March 1, 1916, governing the cultivation, manufacture, and sale of TOBACCO in Ecuador, this industry being under

the control of the State. A strict account is required to be kept of the area under cultivation, the quantity and quality of the tobacco produced, and the amount invested in the manufacture of cigars and cigarettes.——A vein of COAL has been discovered at Batan, parish of Benalcazar, Province of Pichincha.——Congress has authorized the executive power to have printed in the Government printing office at Quito at the expense of the State, a pamphlet descriptive of the FLAG and coat of arms of Ecuador, compiled by Dr. Augusto R. Jácome.——The municipal council of Quito has decreed the establishment in the Federal capital of a MODEL SCHOOL FOR BOYS under the official name of the Espejo Municipal School, in honor of the Ecuadorian educator, Dr. Francisco Javier Eugenio de Santacruz y Espejo. A building is to be erected capable of accommodating 600 pupils. Funds for the construction of the edifice, its upkeep and the operation of the school are to be provided for in the municipal budget.——The First Ecuadorian Medical Congress, which recently met in Guayaquil, recommended the founding of CHILDREN'S ASYLUMS under the official designation of "Gota de Leche" (drop of milk). The city of Guayaquil is the first of the municipalities to put this recommendation into effect, inasmuch as the municipal council of that place has appropriated funds for this purpose. One of the chief features of the asylum's work is the systematic distribution of milk to indigent children of tender age, a practice which has not obtained heretofore in any of the cities of the Republic, but which, owing to the initiative of the congress referred to, promises to become general in the larger centers of population of the country.——The Ecuadorian and Colombian commissions appointed to study the international questions concerning the PUM REGION are now engaged in that work. Dr. Darío Guerrero Sosa is chairman of the Ecuadorian commission, and Carlos Emilio Grijalva, secretary.——A WIRELESS telegraph station is to be erected at Bahia de Caraquez out of funds subscribed by citizens of that port. In 1913 the Congress of Ecuador voted 300,000 sucres (sucre = $0.4867) for the establishment of a modern system of wireless telegraph installations throughout the Republic, but only the station at Santa Ana Hill and the one in use by the captaincy of the port of Guayaquil have been erected.——The Guayaquil Agencies Co., representing the New York and Pacific STEAMSHIP CO., the Atlantic and Pacific Steamship Co., and the Johnson Line, all of which are generally known as the Merchants or Grace Line, has arranged with the Government of Ecuador to establish regular sailings of not less than one steamer a month from New York or San Francisco to Guayaquil, touching at two or more of the ports of northern Ecuador. The steamship company agrees not to raise its

transportation rates during the 12 months in which the contract is in force, and the Government exempts the company for the same period from the payment of Federal and municipal taxes.

GUATEMALA

On February 9, 1898, 18 years ago, Licentiate Estrada Cabrera became acting PRESIDENT of Guatemala, due to the death of Gen. José Maria Reina Barrios. During this long period, so wisely governed by the present able executive, who has again just been elected to the presidency for another term of 6 years, beginning March 31, 1916, the country has prospered in every field of activity, in the development of agriculture, manufactures, stock raising and mining, and particularly in the great field of public instruction, and in the diffusion and betterment of education in general to which President Estrada Cabrera has always given his personal attention and solicitous care, so that the youth of the land, rich or poor, of humble or influential parentage, has been rightly and justly protected in securing an education under the liberal and beneficent school laws which obtain in the country. Guided by the wise and practical hand of the present incumbent, Guatemala can not fail to continue to develop its immense resources, adding thereby to the wealth of its citizens and of the nation in an ever-increasing ratio.——Owing to the enviable reputation, fine quality, and great popularity of Guatemalan COFFEE in the markets of the world, and especially on the west coast of the United States, the National Government has undertaken to guarantee the genuineness of the coffee exported from the Republic and placed on sale in foreign countries, by requiring exports of this commodity to be marked with a special Government stamp, printed slip, or label guaranteeing the nationality and origin of the product. These official labels or printed slips are of two sizes. The size 15 centimeters in length by 5 in width are to be used on boxes or packages containing roasted or ground coffee, and the other stamps or slips, consisting of cloth labels 20 centimeters long by 5 wide, shall be for use on Guatemalan coffee exported in sacks. In both cases the labels or slips must be attached to the shipments in such a way that on opening the packages or sacks, the labels will be broken and rendered unfit for reuse without detection. Exporters of Guatemalan coffee are required to make use of these slips or labels, and failure to do so subjects them to punishment by fine and imprisonment. The Government will send facsimiles of these stamps, labels, or slips to its official representatives abroad, so that comparisons may be readily made and falsifications or evasions be easily detected.——The report of Mary E. Gregg, directress of the

AMERICAN HOSPITAL of the city of Guatemala, covering the second year of the existence of that institution, shows that in 1915 there were 142 cases admitted for treatment, 15 of which were North Americans, 102 Central Americans, 8 Germans, 6 English, and 11 of other nationalities. There were only 2 deaths in the hospital during the year. Thirty-three difficult surgical operations were performed, all of which were successful.——On February 9 last the installation which permits the introduction of water into the city of Guatemala from RAICERO SPRINGS was inaugurated by the secretary of public works.

HAITI

The President of the Republic has reorganized his CABINET as follows: Louis Borno, secretary of foreign relations and public works; Leon Audain, secretary of public instruction; and Annulysse André, secretary of agriculture, war, and marine.——An executive decree of February 4, 1916, gives complete AMNESTY to all who took part in the city of Cayes revolution of December 1, 1915.——Professor Ernest Hamelin has opened a NIGHT SCHOOL in San Marcos, where the elementary branches will be taught to indigent children.——Under a recent law of the National Congress, unredeemed public bonds, drafts, coupons, certificates, etc., issued between October 1, 1899, and July 31, 1911, for Government pensions, subventions, etc., are consolidated under the name of INTERIOR CONSOLIDATED DEBT. These securities, according to the calculation of the committee having the matter in charge, represent a value of 4,226,314 gourdes, and $226,020 gold. Bonds of the denomination of $100 gold, bearing 6 per cent interest per annum from January 1, 1914, and payable annually by lot, are to be given in exchange for these obligations.——Congress has enacted a law authorizing the department of the interior to organize a Government POLICE BUREAU.——On December 31, 1915, the President promulgated a law which prescribes that judges of the court of account, who have passed their fiftieth birthday, are entitled to a PENSION, after four years of service, of 50 gourdes; after eight years of service, 75 gourdes, and after a third election, 100 gourdes. In case of the death of a judge, the widow and minor children, should there be any, are entitled to receive an amount equal to half of the pension which would have been paid in accordance with the provisions of the law.——Congress has passed a law fixing the number of the PRESIDENT'S PRIVATE GUARDS at 550 men, and authorizing the executive to organize said guard.——On January 21 last a CHARITY SUPPER was held in the

legation at Port au Prince for the benefit of the French asylum and of the French widows and orphans of the war.——The ACADEMY OF FINE ARTS, founded by Normil Charles in December, 1915, was inaugurated at Port au Prince on January 10 last.——The BY-LAWS of the sugar-cane growers of Plaine du Cul de Sac, recently organized in the Federal capital, were published in full in the edition of Le Matin of January 8, 1916.——According to press reports a HIGH INTERNATIONAL COMMISSION, to cooperate in the work of the Pan American Financial Conference, treat of the economic development of the country, and the encouragement of more intimate commercial and industrial relations between Haiti and the United States, has been organized in Port au Prince with the following officers: Henri Brisson, president of the board of trade of Port au Prince; D'Ennery Déjoie, head of the Simonds Commercial Co.; Eugène Roy, president of the Exchange Agents' Syndicate; Edmond Montus, member of the board of trade; Fléury Fequière, manufacturer and former member of congress; Raphael Brouard, merchant and member of the board of trade; George Regnier, honorary president of the board of trade; and Victor Gentil, vice president of the board of trade.

HONDURAS

The total length of the RAILWAY SYSTEM of Honduras at the beginning of 1916 was 516.9 kilometers. The National Railway, the most important road of the country, was valued at the close of the preceding year at 3,193,176 pesos (peso = $0.3841). The gross receipts of this railway in 1915 were 429,126 pesos. Among the smaller railways the following lines may be mentioned: The road belonging to Vaccaro Bros. & Co., from La Ceiba to San Juan and the interior, which extends over a distance of 150 kilometers; the United Fruit Co.'s line, 12 kilometers; the Tropical Timber Co.'s road, 11.5 kilometers; the Trujillo Railroad Co., 40.7 kilometers; and the Cuyamel Fruit Co.'s line, 44 kilometers.——The REVENUES of the Government of Honduras for the fiscal year 1915 aggregated 6,682,891 pesos, and the expenditures 6,461,467, or an excess of receipts over expenditures during the period referred to of 221,424 pesos.——During the school year 1915 there were 351 urban and 154 rural SCHOOLS in operation in the Republic, with 22,668 matriculates and an average attendance of 16,170. The higher schools in operation during the year consisted of the schools of law and medicine, and the Scientific Literary Academy of Honduras.——The TELEGRAPH AND TEL-

EPHONE system of Honduras increased in 1915 by 631 kilometers, making the total length of the lines in operation at the close of the year 7,829 kilometers. This service now extends far into the interior of the Departments of Comayagua, Yoro, and El Paraiso.——The ELECTRIC light and power company which serves the city of Tegucigalpa has three plants, situated at Leona, Centro, and Rio Chiquito. The gross receipts of this company and of the waterworks company during the past year amounted to 53,734 pesos, while the expenditures during the same period were 51,579 pesos.——President Alberto Membreño states in a recent message to Congress that the MINING INDUSTRY of the Republic, which is destined to become one of the great sources of wealth of the country because of the abundance of ores found, remains stationary. A large number of petitions for mining concessions have been filed, but no new companies have commenced work in the Republic for some time. The executive recommends the enactment of a law limiting mining concessions in such a way as to prevent monopoly and encourage the development of the industry. Ten mining zones or concessions were granted during the past year, representing an area of 5,680 hectares, while 45 claims, embracing an extent of 25,550 hectares, are still under consideration. The total mining zones registered in the department of fomento up to the present time represent an area of 60,412 hectares.——The GOVERNMENT PRINTING OFFICE at Tegucigalpa, consisting of departments of lithography, photogravure, printing, binding, and ruling, did work during the past year valued at 40,086 pesos, at an operating cost of 31,728 pesos. One of the largest orders of the year was an issue of eight denominations of postage stamps representing a value of 400,000 pesos.

MEXICO

In January, 1916, the exports of crude PETROLEUM from Tampico to the United States aggregated 1,315,979 barrels. Recent estimates of the petroleum available for export from Mexico during the present year fix the quantity at 13,000,000 barrels.——The Tampico-Panuco Valley RAILWAY is reported to be nearing completion. This line, which penetrates one of the richest oil zones of the Republic, will soon be open to public traffic.——The governor of the State of Vera Cruz has prohibited the making of any CONTRACT OF PURCHASE AND SALE, lease, mortgage, or pledge (censo) of any kind, the subject matter of which relates to real property situated within the boundaries of that Commonwealth

without first having obtained the authorization of the State Government.——A new line of STEAMERS between Ensenada, Mexico, and San Diego, Cal., was inaugurated in January last.——In December, 1915, the harvesting of the SUGAR CANE and other crops of the State of Sinaloa, required the services of over 25,000 laborers.——The Provisional Government has issued a decree prohibiting the exportation of COTTON, cotton seed, and cottonseed oil on and after February 1, 1916. In January last 120 cars containing 6,000 bales of cotton, valued at 25,000,000 pesos, reached the City of Mexico for distribution to the cotton factories in the Federal District, and the States of Puebla, Michoacan, Guanajuato, Mexico, Queretaro, and Tlaxcala. It is reported that the Government has arranged with the cotton planters of the Laguna District, near Torreon, for their entire output, all of which is to be equitably apportioned among the cotton mills of the country.——A Government decree forbids BORING FOR PETROLEUM, either for exploration or exploitation purposes, within a distance less than 30 meters from the boundaries of the properties. Requests for permissions to make borings must be accompanied by a map or drawing showing the location of the property, and if situated near rivers, highways, or towns, the distance from same.——It is reported that the Bluefields Fruit & Steamship Co. has purchased the Snyder interests in the American Fruit & Steamship Co., which maintains a regular service between Frontera, Mexico, and New Orleans. The new owners will continue to ply between the ports mentioned, but may discontinue some of their sailings to Central American ports.——Under date of January 14, 1916, the governor of the State of Tamaulipas issued a decree prohibiting Mexican citizens from alienating REAL PROPERTY situated in that Commonwealth, with the exception of mining claims, to foreigners or foreign companies. The decree forbids Mexicans from contracting with foreigners for a longer period than one year, and prescribes that contracts made abroad shall be considered void.——The Chamber of Commerce of Beaumont, Tex., has called the attention of Mexican oil-producing companies to the DEEP-WATER FACILITIES of that harbor, and has requested them to establish a shipping station there.——The American Smelting & Refining Co. has recently shipped quantities of Birmingham, Ala., coke to its SMELTERS in Monterey, Chihuahua, Matehuala, and Velardena. The smelter at Monterey is now in operation, and it is reported that the one at Aguascalientes will soon be ready to blow in.——A SCHOOL OF ARTS AND CRAFTS, fitted up with tools and apparatus brought from the City of Mexico, has been opened in Queretaro.——A recent IMMIGRATION law requires immigrants entering Mexico to have at least $50 cash before being admitted.

NICARAGUA

The SAWMILL established at Schooner Cay on the Atlantic coast near Bluefields about a year ago by Lawder Bros. for working up mahogany and cedar logs has been enlarged until, at the present time, it employs about 50 persons at the mill proper, in addition to hundreds of laborers engaged in locating timber in the forests, cutting down the trees, rolling the logs into the streams, and collecting and rafting them on the coasts and rivers for transportation to the mill. The plant is equipped with modern band saws, has a railway for hauling the raw and finished products, the former from the vessel to the mill and the latter from the storerooms to the water front to be loaded on ships employed in the export trade. The finished product is consigned to Philadelphia and is shipped on vessels regularly chartered for that purpose. At the beginning of February, 1916, it was estimated that there were more than 1,000,000 feet of mahogany lumber stored in the vicinity of the mill, together with a large quantity of cedar flitches used and highly prized in the manufacture of cigar boxes. The shops of the Bluefields Ship & Steamship Co. are also located at Schooner Cay, and are exceedingly useful and convenient in repairing vessels and barges engaged in lumbering and in commercial operations in that vicinity.——The President of the Republic has submitted to the consideration of Congress two ad referendum RAILWAY CONTRACTS, one of which provides for the construction of a road from Managua to San Juan del Sur, and another for the building of a line from Bluefields to Managua.——On January 29 last the Chamber of Deputies passed a bill providing for the free introduction of CRUDE OIL, for a period of two years, for disinfecting and street sprinkling purposes. Owing to the high price of gasoline and oil for fuel, the press of Nicaragua is advocating that these also be placed on the free list in order to encourage the use of these fuels for industrial purposes and to aid in developing the manufacturing industries of the country.——The minister of finance of the Government of Nicaragua has issued the following instructions to customs officials of the Atlantic coast concerning the collection of local TAXES ON MINING IMPORTATIONS: "The customhouses shall strictly follow the provisions of article 231 of the mining code and in future shall not collect municipal and local taxes. The customhouses shall continue collecting wharfage, storage, and consular duties on the importations of the mining companies because these services require remuneration for the expenses they occasion, but shall not collect fiscal and local taxes. The word "tax" (impuesto) used in the mining law comprises the fiscal as well as the local taxes collected by boards and corporations."——A TELEPHONE LINE has been completed and put in operation between

Sinua and Wany in the mining district of Prinsapolka.——The Department of Matagalpa has a FOREIGN COLONY consisting of 232 persons of the following nationalities: North American, 67; German, 65; English, 63; Spanish 15; Italian, 14; and Chinese, 8. The cacao plantations of the department referred to contain 32,900 trees; the sugar-cane growers have in operation 160 cane mills; and the stock raisers have cattle to the number of 12,291 head. The latter industry supports 113 dairies and 32 cheese factories.——A new CATHEDRAL is being erected at Granada, a large quantity of the material used in its construction having been imported from Europe.

PANAMA

A survey has just been made by J. T. Luttrell, an American mining engineer, for the construction of a MACADAM HIGHWAY across the Isthmus of Panama from Boquete to the Atlantic seaport of Rovalo, and from thence to Almirante, which is said to be one of the best harbors south of the United States. According to this survey the proposed road will be 120 kilometers, or 74.5 miles in length. The country through which this highway will pass is entirely virgin and without paths or trails of any kind. The surveyors had to cut their way through the thick underbrush and forests, and required five months of arduous labor in which to do the work. In the opinion of the engineers who have gone over the survey, this road, when completed, will be one of the most picturesque highways in the world. The survey crosses the crest of the mountain range at an altitude of 6,000 feet. The country traversed is well watered, for the most part uninhabited, and everywhere exceedingly wild. In the hilly and mountainous part of country through which the proposed road is to be built waterfalls abound, one of which is said to have a sheer drop of 120 feet Press reports state that the work of construction will be commenced in about two months. The highway is to be a standard macadam road with an 8 per cent maximum gradient and a minimum curvature of a 20-meter radius.——Arrangements have been made by the Government of the Canal Zone to clear 4,000 acres of land between New Culebra and Sierra Tigre for use in fattening BEEF CATTLE brought from the Republic of Panama and adjoining countries. It is proposed to seed the land to guinea grass and prepare it for the permanent maintenance of 10,000 head of cattle to be purchased by competitive bids. After the first 10,000 head are placed on the land, it is planned to buy 1,000 head a month, which number, it is estimated will be slaughtered every 30 days. The demands of the Zone now require the killing of about 800 head

of cattle per month. A shipment of Colombian cattle, consisting of a collection of large steers, many of which will weigh 600 pounds each when dressed, has recently been received in the Canal Zone.——The Government of Panama is considering a plan for the building of a large HIPPRODROME at El Hatillo, near the exposition grounds in the suburbs of the city of Panama and within a short distance of the beach. An American company has proposed to advance the funds, and do the construction work, the estimated cost of which is $100,000, provided the Government will grant it a concession to operate the same for a period of 25 years on the basis of a certain percentage of the gate receipts, the property to revert to the Government at the expiration of that term. While the Government considered the proposal, no information has yet been received of its acceptance.——The NATIONAL EXPOSITION of Panama was formally opened on the 6th of the present month, with an attendance of nearly 8,000 persons.——A CONGRESS OF CHRISTIAN WORK in Latin America was held in the city of Panama from February 10 to 20, 1916. Over 500 delegates, representing 22 nationalities, were in attendance. The work of the congress was continued by these delegates in the Missionary Conference which was held in Habana, Cuba, from February 26 to 29 of the present year. A decision was reached to hold conferences in Chile, Argentina, Porto Rico, and Mexico, and to conduct a continent-wide missionary propaganda in Central and South America.

PARAGUAY

In a messsage to Congress under date of December 24, 1915, President Eduardo Schaerer transmitted the proposed governmental BUDGET for 1916. The estimated revenues are given as 2,223,927 gold pesos (gold peso = $0.9648), and 38,463,600 pesos currency (paper exchange rate 2,500 per cent). The gold receipts of this budget are estimated as follows: From imports, 801,000 pesos; from exports, 910,800, and from other sources, 512,127 gold pesos. The estimated expenditures amount to 2,130,907 gold pesos, and 42,767,160 paper pesos.——Figures have been compiled showing that the LIVE STOCK of Paraguay at the present time is, approximately, as follows: Horned cattle, 5,340,000; sheep, 600,000; horses, 478,000; goats, 87,000; hogs, 61,000; asses, 18,000; and mules, 17,000.——The law passed by the Congress of Paraguay in December, 1915, authorizing the PAVING of the national capital and the issue of bonds to the amount of 1,000,000 gold pesos, to which reference was made in the January, 1916, BULLETIN, was promulgated by the President of the Republic on January 4, 1916. The complete Spanish text of this law was

published in El Diario, a daily newspaper of Asuncion, on January 6 last.——During the last few years, owing to the persistent efforts of the Agricultural Bank of Asuncion in procuring and furnishing at a low cost seed WHEAT to agriculturists in different parts of the Republic, the cultivation of this cereal has constantly increased, especially in the zones within easy transportation reach of the national capital. The best time to sow wheat in Paraguay is in April, and about 70 kilos of the cereal are used to the acre. The practice of disinfecting the seed with a weak solution of sulphate of copper, just before sowing it broadcast on the land, is becoming more and more prevalent throughout the country, and in this way rust and smut are prevented to such an extent that little damage results from this source.——The CUSTOMS REVENUES of the Government of Paraguay during the first 11 months of 1915 were as follows: Imports, 13,707,457 pesos, currency; exports, 6,558,630 pesos, currency, and 311,325 pesos, gold.——The transactions of purchase and sale of REAL PROPERTY in the Republic during the first half of 1915 amounted to 29,472,228 pesos, currency, and 1,096 pesos, gold.——The Paraguay Sugar Association has been granted a concession to extend the railway at present existing on its properties to Alonso-cue, via Cerrito Costa. The road, which will be called the PARAGUAY SUGAR RAILWAY, is to have a minimum gauge of 1 meter, and will be built in sections. The first section of 13 kilometers must be opened to public service within 2 years, and the second section of at least 9 kilometers will be opened to public traffic within 6 years. The road is exempt from Federal and municipal taxes for 25 years, as is the material, rolling stock, tools, and supplies necessary for the construction and conservation of the line. The Government will enjoy a reduction of 50 per cent in the regular freight and passenger tariffs of the road.——The NORMAL SCHOOL at Villa Rica, which was founded in 1914, had over 80 graduates at the close of 1915, and there are 120 applicants for degrees in 1916. This constitutes the nucleus of a large and growing force of trained teachers who, for the most part, will be employed in the public schools of the country, and especially in the primary schools of remote districts of the Republic.

PERU

The BUDGET for 1916 prepared by the executive for submission to the Peruvian Congress estimated the amount of the receipts at £2,686,950 and the disbursements at £2,756,317, or a deficit of £69,367. The Chamber of Deputies altered the proposed budget by suppressing and decreasing items of expenditure amounting to £29,277, and increased the estimated expenditures to the amount of

£193,119. The budget for 1916 as approved by the House of Deputies gives the estimated receipts as £2,686,950 and the expenditures as £2,920,159, or a deficit of £233,209.——The new 2,000-horsepower HYDROELECTRIC PLANT of the Backus & Johnston Co., located 6 kilometers from Casapalca and completed in November of last year, is furnishing light and power to the smelter at Casapalca. A transmission line is being extended to the Morococha mines, a distance of 18 kilometers, and it is expected that before the middle of the present year these mines will receive light and power from the plant referred to.——The Governments of Peru and Bolivia have concluded a POSTAL MONEY-ORDER CONVENTION, the full text of which is contained in the official newspaper of Peru of January 24, 1916.——The proposed plan of the Peruvian Government for the IRRIGATION of the Chilca Valley is estimated to cost £150,000. This valley is 65 kilometers from Lima, and the railway which is being built in that direction is expected to be completed to Lurin, 40 kilometers from the national capital, in August next. This will bring Chilca within 25 miles of the railway. The public highway to Chilca runs through a level and easily traversed country. Of the 3,000 hectares of land which it is proposed to irrigate in the Chilca Valley, 2,000 belong to the National Government. Before the water reaches the irrigated part of the valley it will be used to generate electric energy estimated at 1,000 horsepower.——According to press reports the Peruvian Congress has imposed a duty on import of MATCHES of 40 centavos per kilo in 1916, 30 centavos in 1917, and 20 centavos per kilo in 1918.——It is a well-established fact that large areas of the Andean-Peruvian Plateau, situated at elevations of from 2,000 to 3,000 meters above the level of the sea, are admirably adapted to the growing of WHEAT, producing a grain of good quality and an abundant yield. The imports of wheat into Peru through the port of Callao during the two years prior to the European war, were about 55,000 tons annually, which quantity diminished in 1914–15 to about 40,000 tons per annum. The Cajamarca Valley is one of the most favored wheat-producing zones of the Republic and is conveniently located as to markets. In 1915 more than 1,500 tons of wheat were sent from this region to Callao. It is estimated that the milling industry of Peru, which is capable of great development, represents at the present time an annual profit to those engaged in it of 1,492,947 soles (sol = $0.486).——The Peruvian Economist, a monthly publication of Lima, has formulated a plan the object of which is to raise funds by popular subscription for the erection in the Plaza de Armas (central square) of Lima, of a MONUMENT in honor of Gen. José de San Martín, who proclaimed at that place the liberty and independence of Peru on July 28, 1821. The monument is to be unveiled on the hundredth anniversary of this important event.

SALVADOR

The Salvadorean Petroleum Co. has contracted with Francisco Parrilla, owner of the Panalapa plantation, situated between the Departments of Santa Ana and Chalatenango, to work a PETROLEUM DEPOSIT recently discovered on that plantation by prospecting engineers employed by the company. English specialists, who have studied the petroleum fields of Salvador, consider them almost identical to those of the oil zones of the State of Vera Cruz, Mexico, and believe they contain an abundance of crude petroleum of a quality suitable for industrial uses. The development of the oil fields of Salvador promises to become, in the near future, one of the great industries of the country.——An order of the treasury department prescribes that CUSTOMS DUTIES, collectible on and after January 1 of the present year in accordance with the provisions of the new tariff, shall be payable as follows: Five per cent in American gold coin or bank notes representing gold; 6 per cent in shares of the International Railways of Central America; 10 per cent in sight drafts on New York, and 79 per cent in silver pesos at the current rate of exchange.——A recent executive decree establishes a bibliographic committee of Salvador whose duty it is to examine the TEXTBOOKS used in the primary, secondary, and normal schools of the Republic, as well as maps, drawings, etc., employed for educational purposes. The committee consists of 11 members, of which the following are permanent: Director general of public instruction, director of the Normal Central College for Boys, and the directress of the Normal College for Girls. The remaining members are to be appointed by the secretary of public instruction, and are to be representative of the fields of literature and philosophy, the natural and physical sciences, and mathematics.——Since the first of the present year the Diario del Salvador, an important DAILY NEWSPAPER published in the Federal capital, issues a morning and evening edition during week days, and a noon edition on Sundays.——An ELECTRIC light and power company has been organized in the city of Chalatenango. The stock of this company has been subscribed by local residents, and arrangements have been made to begin work on the plant within a short time.——After due examination by the committee on textbooks of the Government of Salvador, the ILLUSTRATED GEOGRAPHY of the Republic, compiled and published by Pedro S. Fonseca, has been adopted by the department of public instruction for use in the primary, secondary, normal, and commercial schools of the nation.——In 1915 the bureau of patents of Salvador registered 26 TRADEMARKS and 6 patents of invention.——A regular AUTOMOBILE SERVICE has been established between

Zacatecoluca and the city of San Salvador.——A well-equipped ICE FACTORY has just been put in operation in the city of Usulutan.—— The Salvador Railway Co. has temporarily suspended its STEAMSHIP SERVICE between Balboa, Panama, and the western coasts of Central America and Mexico.——The GEOGRAPHIC SOCIETY OF AMERICANISTS of Salvador has commenced the publication of a well-edited and handsomely printed quarterly review which is the official organ of the society.——The President of the Republic has communicated to the association of Spanish authors and writers that the Government of Salvador is disposed to contribute, financially and morally, to the CERVANTES INSTITUTE in Spain, which that organization has decided to found for the gratuitous care of Spanish and Latin American authors and writers who may be suffering in Spain from illness and broken health.

URUGUAY

The EIGHT-HOUR BILL recently passed by the Uruguayan Congress provides that the actual labor of workmen in factories, workshops, shipping yards, quarries, construction works on land or in ports, coasts, or rivers, employees or servants of industrial or commercial establishments, drivers, guards, and other employees of rail and tram ways, cartmen, and all persons engaged in smilar employments to the ones mentioned, including laborers and artisans employed in works of the State, shall not exceed eight hours daily.——A law has been promulgated imposing a TAX UPON ADVERTISEMENTS. The placing of advertisements facing a public way, or visible therefrom, is prohibited in the city or Department of Montevideo without the permission of the authorities and the payment to the municipal intendancy of the prescribed tax relating to the advertisement in question. The advertisements covered by the law are of an industrial, commercial, or professional nature, and include announcements, posters, advertisements painted upon or affixed to walls, fanlights, awnings, lamps, shutters, illuminated signs, windows, doors, show cases, etc. The tariff of prices per annum ranges from 2 centavos on picture films to 40 pesos (peso = $1.0342) on automobiles.—— The department of industries of the Government of Uruguay has made an ad referendum contract with the Federal Holding Co. for the establishment of a WIRELESS telegraph station, and President Viera has transmitted the agreement to Congress recommending its approval.——The National REGATTA CLUB of Montevideo has just completed and opened to service its magnificent new building, having a frontage on the bay of more than 50 meters. The boathouse, on the ground floor of the building, has a capacity for housing 100 boats,

and is provided with a Decauville railway for launching and storage purposes. The interior of the edifice is finished with the beautiful native marble of the Department of Minas, and the building is one of the handsomest and best-equipped structures of its kind in America.——Reports from the principal WHEAT growing sections of the Republic indicate that there are, in round numbers, 400,000 hectares of land sown in this cereal. The yield, on an average, is 1,000 kilos per hectare, or an aggregate of 400,000 metric tons, valued at about 16,000,000 pesos. It is estimated that the needs of the country for consumption and seed purposes will approximate 250,000 tons, leaving 150,000 metric tons available for export. As Uruguay adjoins and is in direct railway communication with Brazil, it is in a most favorable position to supply the needs of that market with this cereal, and should, therefore, not be greatly affected in the sale of this product by the temporary lack of ships necessary to transport it to European markets.——The JOCKEY CLUB of Montevideo has decided to erect a magnificent building on its grounds in the vicinity of the Federal capital, the plans for which have been prepared by a noted Italian architect. Arrangements have been made with a Chicago bank for a loan of $2,000,000, available May 1, 1916, at which time it is proposed to begin construction work on the edifice.——A North American syndicate, which recently solicited from the Government a concession for the establishment of a COLD-STORAGE PLANT (frigorífico), has been granted for five years the same privileges as those enjoyed by similar establishments engaged in this industry in the Republic.——The President has transmitted to Congress a bill amending and improving the present system of STATE EDUCATION. The measure provides for compulsory attendance of children between the ages of 8 and 14 in town districts and between 9 and 13 in rural districts. Free books and appliances are to be furnished to all schools, and the teaching of religion is prohibited.

VENEZUELA

The RAILWAYS of Venezuela during the first half of 1915 carried 401,019 passengers who paid fares, and transported 143,086,976 kilos of freight. The gross receipts of these roads during this period were 6,438,710 bolivares (bolívar=$0.193), the total expenditures 3,641,743, and the net gains 2,796,967 bolivares. The total length of the lines is 860 kilometers (534.4 miles).——An executive order concerning the exploitation of PLACER MINES prescribes that miners shall be provided with written permits, signed by the mine inspector, who will issue same upon the requests of the parties in interest. Placer mines must be worked only by panning. The duration of a permit

is one month. Persons who exploit placer mines without a permit are subject to a fine of from 500 to 1,000 bolivares, plus the loss of the gathered material, which latter will be sold at public auction, 50 per cent of the proceeds going to the informer and 50 per cent into the national treasury.——A committee of scientists, the chairman of which was the director of the astronomical and meteorological observatory of Caracas, studied an ECLIPSE of the sun on February 3 last and will soon report the result of their observations.——The National Government has founded a SCHOOL OF MATHEMATICS, physical and natural sciences in the city of Caracas, and has provided instructors for teaching higher algebra, analytic and descriptive geometry, practical topography, surveying and astronomy, physics, chemistry, natural history, and applied mechanics and drawing.——An INSTITUTE has been established by the Government of Venezuela, in connection with the School of Commerce of Caracas, for the teaching of modern languages.——According to a recent report of the governor of the Federal District, the RECEIPTS AND EXPENDITURES of that municipality in 1915 amounted, respectively, to 3,598,206 and 3,158,036 bolivares, which shows a credit balance at the beginning of the present year of 440,170 bolivares. The total outlay for public works in the national capital during the year in question amounted to 94,012 bolivares.——In order to secure pure and unpolluted WATER for the city of Caracas, the Government of the Federal District has issued a decree requiring bridges to be built over the Macaro River and its tributaries, and prohibiting the fording of these streams above the water intake.——During the first six months of 1915 the imports of iron, wooden, and wicker FURNITURE were valued at the equivalent of $13,109, gold.——An order has been issued by the department of war and marine providing for the establishment at Puerto Cabello of a practical naval construction and mechanical SCHOOL with a three years' course of study. Cadets who enter the institution will be appointed by the secretary of war and marine, selection to be made in accordance with the personal fitness of the applicants, who must be between the ages of 15 and 20 years, physically sound and of good character. The expenses of students for board, clothing, furniture, etc., will be borne by the National Government.——According to a report of the consul of Cuba at Puerto Cabello, in 1915 the Venezuelan Meat Packing Co. of that place shipped to England 1,020,223 pounds of REFRIGERATED MEATS, valued at £8,200.

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MARCH · · · · · · 1916

BULLETIN OF THE PAN AMERICAN UNION

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JOHN BARRETT, DIRECTOR GENERAL.
FRANCISCO J. YÁNES, ASSISTANT DIRECTOR.

MONUMENT AT MANAOS, BRAZIL,
COMMEMORATING OPENING OF AMAZON RIVER
TO WORLD NAVIGATION.

GOVERNING·BOARD·OF·THE PAN AMERICAN UNION

ROBERT LANSING, Secretary of State of the United States, Chairman *ex officio*.

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[1]Absent.

SEÑOR DON CARLOS MELÉNDEZ,

Constitutional President of the Republic of Salvador for the period 1915–1919.

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MESSAGE OF PRESIDENT MANUEL ESTRADA CABRERA OF GUATEMALA.

ON March 1, 1916, on the opening of the session of the Guatemalan National Legislative Assembly, President Manuel Estrada Cabrera presented his annual message.

In another part of this issue of the Bulletin are given extensive extracts from the message, dealing more particularly with the economic development of Guatemala. In addition, we here present extracts having a more general and international significance.

In speaking of the part taken by Guatemala at the San Francisco Exposition, the message calls attention to the sympathetic attitude of the Guatemalan Government and people toward the Panama Canal and to the exposition in celebration of its completion, and notes with gratification that this sympathy was returned by the Government and people of the United States and by the officials of the exposition.

In all the Congresses held during the exposition there was representation from the Republic, and in many cases was bestowed upon members of this representation the high honor of being selected honorary presidents, thus unquestionably contributing to the prestige of our country, but the greatest honor done to the country was in the bestowal of the grand premiums for coffee, bananas, cacao, and rubber in competition with the best of these products from other countries, which honor was truly gratifying to our patriotic feelings.

In addition to these grand premiums were awarded 32 medals of honor, 69 gold, 99 silver, and 88 bronze medals, 327 honorable mentions, without counting commemorative diplomas.

As following one of the resolutions approved by the Pan American Financial Congress, which met in Washington from May 24 to 29, 1915, the idea was suggested of creating a financial committee in each of the participating countries, and in consequence, by a decree issued August 7, the Guatemalan committee was organized under the presidency of the Minister of the Treasury and Public Credit.

This committee is now engaged in a preliminary study of the subjects to be submitted at the Buenos Aires Conference of April 3, 1916, and from which substantial benefit to the commerce and finances of America is to be expected.

The European conflict has demonstrated to the countries of America that their inclination should be toward approximation, good understanding, and union, one with the others. The spirit of Pan Americanism has been awakened in each of them, and Guatemala could do no less than take part in this movement which responds to evident necessities, voices high aspirations, and interprets the time honored and patriotic ideal of the great men of the three Americas who dreamed of a practical and effective union of the several free communities composing the same.

Conformably to these ideas the Government of the Republic took part through its representatives in the deliberations in the Financial Conference held in Washington last May, and in which all the American countries discussed together economic, commercial, and financial problems, and initiated a new era in business, beneficial, without doubt, to the reciprocal interests of the peoples represented.

The message speaks of the spirit of confraternity and cooperation which was present in other gatherings, particularly in the Second Pan American Scientific Congress, which began its sessions in Washington in December, 1915, continuing over into January, 1916. The message notes the work of this congress in the field of education and in furtherance of the idea of an American Institute of International Law, and approves an agreement among all the American Republics to mutually guarantee the absolute political independence and territorial integrity of each, to settle their boundary disputes, to arrange all questions and differences by means of arbitration, and to provide by treaty that no Republic shall permit revolutionary expeditions to proceed from its territory into the territory of any other American Republic or allow the shipping of war munitions to revolutionists in another Republic.

Another genuine proof of the importance and efficacy of these ideals is shown in the joint action of several of the American Governments which, in effect, have procured practically the pacification of Mexico. The Government of Guatemala was invited to take part in a joint mediation, together with the United States, Argentina, Bolivia, Brazil, Chile, and Uruguay.

The situation of Mexico was discussed at a series of meetings held in Washington and in New York, as a result of which the Government of General Venustiano Carranza, who had under his authority the greater part of the Mexican territory, was recognized as a de facto government. It is to be hoped that this step, which was immediately ratified and seconded by the remaining American republics, and later by the European powers, will contribute to the reestablishment of peace in the sister republic.

MESSAGE OF PRESIDENT MELÉNDEZ OF SALVADOR.

Dr. Don Rafael Zaldivar, minister of Salvador at Washington, has made public here portions of the address to the Congress of Salvador delivered by President Meléndez of that country, relating to the relations between Salvador and the United States, in which Salvador indorses the proposal for treaties between the United States and the Latin-American countries which provide for territorial integrity of the American Republics.

"This Government," President Meléndez said in his address, "sees in the project of the North American Government a very laudable and sincere effort for preserving peace among the American nations and eliminating from diplomatic relations many obstacles that impede good harmony among the States and sow lack of confidence and suspicion."

After pointing out the difficulties brought to the American Republics by the war in Europe, complimenting President Wilson for his statesmanship and indorsing the pan-American ideal, President

Photo by Harris-Ewing.

DELGADO.

Marble bust of José Matias Delgado, the contribution of the Government of Salvador to the Gallery of Patriots in the Pan American Union Building. Although regarded by Salvador as its foremost son and defender of liberty, he is equally revered throughout Central America as one of the heroes of its early struggle for freedom from the rule of Spain. Delgado was a sincere and patriotic priest, who early recognized the spirit of American liberty and was strong enough to give expression to it. Born in 1767, he was graduated from the University of Guatemala as doctor of canon law, and shortly afterwards became a member of the royal Audiencia, which was the governing body of that period. He led the revolt on November 5, 1811, lived to see an independent Central American Federation, and served as president of its first national assembly in 1823. He died in 1832.

Meléndez in his address declared, "in order that those ideas, revelatory of the highest desideratum of American public law, can be from now on a living and fecund reality, it is necessary that the strongest and most stable powers do not arrogate to themselves any supremacy, nor try to impede the free development of the small American nationalities.

"This," he said, "is precisely to my mind the spirit and the scope of the ample and most high direction in which the North American Government anxiously desires to push forward the international policy of the New World." He continued, in part:

In the presence of the gigantic crisis in Europe that involves all society it was natural to weigh and foresee the contributing part that all the nationalities of the continent of Columbus must share in the new ichnography of the world.

It was not possible that such elementary duty would not be assumed by the statesmen of all America, and that is why, without any doubt whatever, the statesmen who govern in the Capitol at Washington, after closely observing the natural course of events, have decided to offer to the conscience of America a new route which these nationalities must follow, with a view to a future full, perhaps, of rugged difficulties, in order that they may occupy in the new international and economic organization that is brought forth by the enormous European crisis the place that belongs to them as factors of such high moral and economic value that probably their proper and prudent performance in the process of the pacification of the earth may convert them into the center of attraction and gravity upon which may better rest the destinies of the human race.

And as we are aware that the lamentable phenomenon of the aggression of the strong, and the distrust and dismay of those who have not yet reached that point, is the ostensible and apparent cause of the disorganization of the system of solidarity and harmony that should prevail among all human relations, the first step that the public men of North America should have taken has been logically an act of policy that would eliminate any germ whatever of such tendencies subversive to all just and perpetual order.

This, without doubt, is in line with the transcendental thought of His Excellency President Wilson, in recently proposing to all the Governments of the continent the formulation of a diplomatic pact that would strengthen the independence and sovereignty of the American peoples, and the sound integrity of their territories, by means of a solemn agreement, all mutually guaranteeing the inviolability of the national and sovereign patrimony of each.

This step, of such transcendence in the policy of American fraternity that animates the North American Government, is the most firm foundation upon which the destinies of America could rest, and which reserves to her the future organization of the world.

Being profoundly convinced that the tendency of the nationalities to form concentrated and autonomous groups is an irresistible and characteristic tendency of the new times, I believe that the first principle and the primary necessity of the international organization of the American peoples should be unrestricted and absolute respect for the spontaneous formation of groups which should be constituted with entire freedom and only through the affinities which consolidate and attract the various national elements without obstruction or outside pressure of any kind.

Unless the principle of nationalities, which is the supreme form of popular sovereignty, constitutes an imperative statute within the American public law, peace and order can not be a complete and established fact upon American soil.

And the obedience to such principle imposes duties of an imperious character upon the stronger States if they wish to fulfill the mission that they have to accomplish in the concert of free peoples.

But in order that those ideas, revelatory of the highest desideratum of American public law, can be from now on a living and fecund reality, it is necessary that the strongest and most stable powers do not arrogate to themselves any supremacy nor try to impede the free development of the small American nationalities by means of coercive systems or by intermeddling in their territory. Thus, and only thus, would it be possible to reach an international American organization founded upon the basis of justice, liberty, and law.

The political systems that seek the solution of international problems by means of tutelage or of hegemony have always been nugatory and injurious to the constitution of order and just and profitable development of the community of the nations.

And this is precisely, to my mind, the spirit and the scope of the ample and most high direction in which the North American Government anxiously desires to push forward the international policy of the New World.

We, then, the heads of the American States, ought to gather with enthusiasm such noble teachings and to have faith and confidence that the spirit that dictates and animates them could not be other than the spirit of liberty and justice of the people of Washington and Jefferson, and without which any attempt toward a reconstruction of a system of equity and law in America would result in sterility and failure, and would even be against the good purposes sought.

His Excellency President Wilson has submitted to us a draft of a treaty to be subscribed by all of the American Republics, in which the high contracting parties should solemnly agree to unite in a common and mutual guarantee of the territorial integrity of their political independence under the republican form of government.

In order to give a definite application to that guaranty the contracting Governments are to bind themselves to reach a settlement of all their questions of boundaries or territories now pending by means of a friendly convention, or by recourse to arbitration; it is likewise established that all questions of any character that might arise between two or more of them that can not be adjusted through ordinary diplomatic channels before producing a break of hostilities or a declaration of war shall be submitted to a permanent international commission of investigation, at least for one year, and if that investigation does not result in the settlement of the litigation the questions in dispute shall be submitted to arbitration if the subjects do not affect the honor, the independence, or the vital interests of the litigant parties or the interests of a third party. The project also stipulates the formal agreement of not permitting the departure from their respective territories of any military or naval expedition hostile to the established Government of any of the contracting States, and also of prohibiting and preventing the exportation of arms, munitions, and any other elements of war destined to be used in uprisings and insurrections.

This pact, which it is desired to establish, is very satisfactory and highly significant, because in the future no American power, including the United States, can acquire any territory outside of its legally established borders; this, and nothing else, is the meaning of the stipulation of the common guaranty of the territorial integrity and the political independence of the nations subscribing to the treaty.

This Government sees in the project of the North American Government a very laudable and sincere effort for preserving peace among the American nations and eliminating from diplomatic relations many obstacles that impede good harmony among the States and sow lack of confidence and suspicion—above all, when a diplomatic dispute with strong Governments take place, which are not always willing to concede the rightfulness of the claim to the ones who possess inferior means of material defense, although it belongs to them.

BEGINNING OF WORK ON THE HONDURAN SECTION OF THE PAN AMERICAN RAILWAY.

In the city of Simisirán, in southern Honduras, on February 26 of this year, was inaugurated the beginning of the work of construction

of the Honduran section of the Pan American Railway from the Salvadoran frontier on the west to the Nicaraguan frontier on the east. This section when completed is intended to form a connecting link between the railway system of the United States, Mexico, Guatemala, and Salvador on the one hand and the systems of Nicaragua and Costa Rica on the other, which latter will ultimately be extended to Panama and South America.

The inauguration of the enterprise was in the presence of a large assembly of governmental, departmental, and municipal officials, representatives of the contractors, of financial, commercial, and industrial interests, and of citizens in general.

As specially representing the Honduran Government, Dr. Alberto Membreño, Vice President of the Republic, minister of fomento, public works, and agriculture, and Honduran minister plenipotentiary in Washington, lifted the first spadeful of earth and drove the first spike for the new railway. In his address to the assembly Dr. Membreño said:

GENTLEMEN: Much honor has been done me in the past in having been chosen to serve the Republic in Spain, Mexico, and the United States, for the which I have been profoundly moved, but none of these honors have so touched me as that I now feel in being chosen to inaugurate the work on the Pan American Railway.

This work which in itself is of small magnitude, not more than 141 kilometers to be constructed from the Salvadoran to the Nicaraguan frontier, mostly in open territory, represents, nevertheless, the union of our country with Mexico, the United States, and Canada on the north and with the remainder of the American Continent on the south.

And this union is not solely commercial; it is likewise political, intellectual, moral, and, in fact, a union of all the great interests of America. It is more complete than that conceived by the great Bolivar. The Liberator dreamed of political pacts to safeguard our independence from European aggression, but we attain without any pact whatever and in the natural order of things a fusion of the races.

Honduran economists have long desired to build up the southern part of the Republic, the territory which remained from one of the past geological convulsions, which, breaking apart the Andean chain and creating the Gulf of Fonseca, left this southern coast in general less suitable for agriculture than the northern coast. This desire may now be realized, since the Government and the contractors are disposed to carry into effect the contract. With this good understanding nothing may be apprehended as an obstacle to the realization of the railway.

The Departments of Cholutica and Valle, which from their geographic position and the character of their people are among the first in the Republic, will have in the railway that we at this time inaugurate a powerful auxiliary on the road of immediate progress. Even if it be that the banana can not be cultivated as in the north, other tropical plants like henequin and, above all, cattle raising will bring prosperity to these localities with the facilitating and cheapening of the means of exportation of the products of their industries.

It only remains for me to say that in view of the importance of the railway it is recommended to owners of lands, workmen, and other persons who may be brought in connection with the construction that they strive to have no misunderstandings therewith, and those which do result should be arranged in a satisfactory manner, taking into consideration that the benefits which will result when the work is concluded are incalculable. Gentlemen, in the name of the Government I declare work on the Honduran section of the Pan-American Railway inaugurated.

DEPARTMENT OF EDUCATION IN THE PAN AMERICAN UNION.

One of the important items of business transacted at the February meeting of the Governing Board of the Pan American Union was the unanimous passing of a motion presented by the ambassador of Chile, Sr. Don Eduardo Suárez-Mujica, for the appointment of a special committee to carry out resolution No. XXII of the Second Pan American Scientific Congress. This resolution recommends the organization of a department of education in connection with the Pan American Union, and confirms previous resolutions of a similar tenor adopted at the First Pan American Scientific Congress of 1908 and 1909 and the Fourth Pan American Conference of 1910. By the terms of the resolution, it is provided that the department of education shall (*a*) be intrusted with the publication, in English, Spanish, and Portuguese, of such works on education as are of importance to the American countries; (*b*) keep the different Republics in touch with educational progress; (*c*) promote in each country the scientific study of educational problems from both national and American standpoints; (*d*) facilitate the interchange of ideas and information among the teachers of the continent, and in general to serve the educational interests of America. The special committee appointed includes Ambassador Suárez-Mujica, of Chile, chairman; Minister de Pena, of Uruguay; Minister Morales of Panama; Minister Dominici of Venezuela; and Director General John Barrett of the Pan American Union.

LATIN AMERICAN RETURN VISIT COMMITTEE.

Since the publication of the last issue of the BULLETIN, in which mention was made of the commission which sailed for Central America to return the visit of the delegates from those countries to the Pan American Financial Congress, the committee in charge of arranging these commissions has made considerable further progress in its plans. In addition to the commission that is now touring Central America, there is another party making a similar trip through Uruguay. This delegation includes Frank H. Wesson, of Smith & Wesson, Springfield, Mass.; A. H. Titus, of the National City Bank, New York; W. E. Hinchcliff, president Burson Knitting Co., Rockford, Ill., and Thomas A. Crimmins, of Crimmins & Pierce Co., Boston, Mass. Due to previous business arrangements, the Uruguayan commission did not sail in a body, but it is understood they will all assemble at Montevideo some time between the middle and end of March, and there prepare a report to submit to Secretary of the Treasury McAdoo, who will be in attendance at the conference of the International High Commission in Buenos Aires. According to tentative plans, a party consisting of not less than 5 nor more than 10 persons will sail on the 29th of April accredited to Argentina and Paraguay; another commission similarly constituted will also sail about that

Courtesy of "Fon Fon," Rio de Janeiro.

THE AMERICAN CHAMBER OF COMMERCE FOR BRAZIL.

Recently there was organized at Rio de Janeiro a chamber of commerce composed of a number of United States concerns with established branches in Brazil. The election of officers resulted in the choice of Mr. T. B. McGovern as president, and the above picture was taken at a dinner tendered in his honor. The chamber is now affiliated with the Chamber of Commerce of the United States. Seated, front row, the fourth from the left is Hon. Edwin V. Morgan, the United States ambassador at Rio; on his right is T. B. McGovern, president of the chamber; the others from left to right are Messrs. Gilbert, J. H. Washburn, Richard S. Noxon, Will Smith, and Menocal. Middle row: Messrs. H. H. Corson, jr.; Sheehan; W. Van B. Van Dyck; Heye; H. M. Sloat; C. M. Mauseau; T. B. McGovern, jr.; George W. Gaidzik; A. L. Moreau Gottschalk, consul general of the United States, toastmaster; C. P. Jungling; J. Harnisch; Dr. Perkins; Carlos Warren; Dr. Shaw; Dr. McCloskey; V. P. Bowe; Dr. Potter; Capt. William Lowry. Third row: Messrs. J. A. Salicrup; W. G. Stevens; Dr. Hentz; E. A. Sturgis; Rudolph McGovern; D. A. McMillen; S. Pereira; Richard P. Momsen, vice consul of the United States; Dr. Houstan; and G. K. Stark.

time for Brazil. Some time during April still another party will be designated for the west coast of South America to include Peru, Bolivia, and Chile. Chemical deposits, at least three important mining districts, the center of the cotton industry, and other lines of export and import will be carefully investigated. A separate commission will be sent to Ecuador, another will visit both Venezuela and Colombia, and still another delegation will include in its itinerary Cuba, Dominican Republic, and Haiti. An interesting fact about the Central American Commission is that three members of the party speak Spanish perfectly and the other members began the study of that language before the party left New Orleans, and will continue their studies throughout the trip. Already excellent reports are being received from them. A call was made at Habana, Cuba, and at Panama meetings were enjoyed with commercial organizations and governing bodies. A banquet, a luncheon, and visits to the national exposition and to the canal formed part of the entertainment in that country.

FIRST PAN AMERICAN CHILD'S CONGRESS.

For the first time in history an international Pan American conference has been called for the purpose of considering matters distinctively and specifically relating to child welfare in the countries of the Western Hemisphere. It is to be known as the First American Child's Congress, and is to be held during the month of July, 1916, in Buenos Aires, Argentina. The purpose of the congress, as outlined in the official program which has been published in Spanish and in English and is being distributed throughout the countries of Pan America, "is to study all matters referring to the child in itself, in its relations to the family, society, and the State." The members of the congress are to consist of the official delegates from the Federal capital, Provinces, Territories, and municipalities of the Argentine Republic; delegates from the various Governments of American countries; delegates from Argentina, and foreign societies or corporations who may be interested in the objects of the congress, and persons individually interested who, by paying the sum of $5 (Argentine gold), may become eligible to membership. Teachers in primary schools and students of universities and normal schools will be admitted to membership upon payment of half the regular fee.

The program of the congress provides for the division of the multifarious subjects to be considered into seven principal sections, viz, legislation, hygiene, education, psychology and anthropology, aids to mother and child, sociology, and industrial legislation. Each of these sections will be provided with a presiding officer (a specialist in that particular line of study) and with a secretary. Under the head of "legislation" will be considered such subjects as (1) Organization of the public ministry of minors; (2) Investigation of paternity; (3) The vicious and abandoned delinquent minor. Also additional

OFFICERS AND BOARD OF DIRECTORS OF THE PANAMA ASSOCIATION OF COMMERCE.

Seated, left to right: P. G. Eastwick, treasurer; C. Quelquejêu, second vice president; H. F. Alfaro, president; Manuel Espinosa B., first vice president; Juan Navarro, secretary. Standing, left to right: J. A. Jiménez, Eduardo Icaza, Eric Barham, Arturo Delvalle, and Gus. Eisenmann, directors. At the general meeting in January, President Alfaro presented a report on the activities of the association since its organization in May, 1915. The purpose of the association is to "promote the development of trade, industries, and professions, assisting in their prosperity and advancement." Also to assist in every way possible in the improvement of the civic, commercial, and general conditions of the country and its people.

subjects, such as "Reports upon the present state of establishments for detention and correction"; "Organization and juridical function of the private, religious, or lay societies for the protection of minors and their relations to the State," etc. Among the subjects officially assigned for consideration by the section of hygiene are such as (1) Should the physical and intellectual education consolidate the methods of pedagogical and hygienic culture in the primary school? (2) Psychological, physiological, and pathological effects on the pupil (day or boarding) of the sedentary habits customary in faulty methods of education; (3) Domestic and social causes of infantile disease and mortality; (4) Should the education and reeducation of feeble, backward, and defective children be the concern of the institutions of public education or preferably of special and complementary institutions for the preservation of the pupil?

Other topics recommended for consideration and concerning which papers prepared by experts in such matters will be submitted to the section of hygiene include such subjects as scholastic health, physical education, intellectual hygiene, social hygiene, education and scholastic hygiene, teaching of hygiene, scholastic pathology, administration of scholastic hygiene, etc. It may thus be seen that every possible phase of the subject of hygiene as applied to the child will be studied and discussed. So will all the other sections take up lines of study in their respective spheres. In other words, this congress promises to be the most thorough study of child welfare in all its phases in the light of the newest and most scientific and advanced theories that has ever been undertaken. Large delegations from the United States and all the Latin American countries are expected to participate, and the congress has aroused the interest of thoughtful and progressive people in every American country. The president of the executive committee is Dr. J. Lanteri Renshaw, of Florida., F. C. C. A., Argentina. The Pan American Union has received a limited number of official programs in both Spanish and English for distribution among those who are particularly interested in the details of the congress and will be glad to furnish copies to those making early application for them. Further information can also be obtained from Dr. Ernesto Nelson, Hotel Newton, 2528 Broadway, New York City. Dr. Nelson was the commissioner of education of Argentina at the Panama-Pacific Exposition.

INTEREST IN PAN AMERICAN AFFAIRS AND THE SPANISH LANGUAGE.

Increasing interest in all that contributes to a proper understanding of pan-American affairs through a knowledge of the language, history, and literature of the countries of Latin America is noted by this office through the vast correspondence which it is carrying on. From all parts of the country come requests for selected reading lists of authoritative histories, works on the political and economic progress of these nations, articles on the social and educational development, and

queries of a similar nature. Moreover, the widespread study of the Spanish language has resulted in numerous demands for the Spanish publications of this organization to be used as texts and reading books. This gratifying interest is found both within and without the schoolhouse, and many instances have been brought to the attention of the Pan American Union where clubs have been organized for a closer study of Pan Americanism. In Boston, Mass., under the auspices of the Young Men's Christian Association, there has been organized a pan-American club with the specific name of El Club Sarmiento. It already enjoys a membership of over one hundred young men and is holding interesting sessions. The objects of the club are to develop a more intelligent appreciation of the efforts that are being directed for a better understanding among the American nations, and to encourage a broader study and use of the Spanish language. In the southern States of the United States there has been a remarkable increase in the numbers of those studying Spanish. Through the propaganda of the Southern Railway and allied lines, it is estimated that nearly 15,000 students have taken up the study of the Castilian tongue. One child in every five is studying that language in the schools of Chattanooga, Tenn. In the University of Virginia, one student in every eight is registered in either a Spanish or Portuguese class, or in some one of the courses dealing with Latin America. A course designed to train men for service in Latin American countries has been introduced in the School of Commerce at the University of Cincinnati. In the University of Texas, at Austin, Tex., and at Vanderbilt University, Nashville, Tenn., a number of courses dealing with pan-American affairs were offered in their summer sessions and attracted large classes of students. In this connection it may be of interest to note that Throop College of Technology at Pasadena, Cal., has decided to place the Spanish language on the same basis with French and German, and encourage the study of it among its students. And the list of such instances might be continued, as this same widespread interest is to be found in all sections of the United States.

SMITH COLLEGE SCHOLARSHIP FOR SEÑORITA BALAREZO, OF ECUADOR.

The Latin American scholarship offered by Smith College, of Northampton, Mass., to some young woman from one of the Latin American countries has been awarded for the year 1916–17 to Señorita Hortensia Balarezo, of Quito, Ecuador. Señorita Balarezo is now a student at Dana Hall, Wellesley, Mass., and will enter Smith in the fall of 1916. The scholarship carries with it an allowance of approximately $375, and was established in 1915 through a gift of $7,500 donated to the college by the class of 1890 with the stipulation that the income therefrom be used for such a scholarship. This is the first award of the scholarship since its establishment, and Señorita Balarezo will be the first to enjoy its advantage.

GLIMPSES OF SOUTH AMERICAN ACTIVITIES TO-DAY[1]

AT the present time when the whole world is to a greater or less extent disturbed by the troubles of Europe, it may be interesting to pause and cast a glance over the vast continent of South America; to note developments of the last few years as well as consider present-day activities, some of which are being pushed with renewed vigor.

During the last eight months it has been the writer's privilege to travel thousands of miles over nine South American countries, and it has been interesting to note the changes and improvements that have taken place since previous visits to the several nations. The brief allusions to commercial and industrial activities that follow might be termed an epitome of a series of articles that will consider such subjects in detail.

In Brazil I was surprised to note the advancement that has taken place within four years. Bahia has a fine new hotel, many miles of newly-paved streets, new and improved street cars, and vast extensions of electric-light service to private homes and business houses. Few of the old time coaches are to be seen; they have been replaced by the automobile.

Sections of the capital city have changed and improved. Leme, Copacabana, Sylvestre, and various other suburbs have built magnificent homes; edifices that would do credit to any city. Five or eight years ago Copacabana Beach had practically no residences; to-day it is a grand boulevard with fine homes of pleasing architecture. São Paulo, Santos, Rio Grande do Sul, and other south Brazilian cities show many improvements that did not exist five years ago. To enumerate them would be too extensive for this brief review; one service, however, that is especially noticeable is the uniting of the peoples of the isolated country sections by telephone, which service I found widely extended as compared with similar facilities a few years ago.

In the years to come, and not far distant, Brazil will derive enormous revenues from its gradually developing cattle lands, the increased output of cotton, and the more extensive cultivation of rice. To-day the rice fields, lying southward from São Paulo, are multi-

[1] By William A. Reid, of Pan American Union staff.

NEW DRAINAGE CANAL AT SANTOS, BRAZIL.

The opening of the canal was the occasion of much interest to the citizens, as reflected in the picture. The canal provides a rapid outlet for the extremely heavy rains and, at the same time, by means of numerous branches, drains the lowlands in and about the city. It is one of the health-giving factors of the newer Santos.

plying. The heavy import duty on this staple food product is causing the Brazilian farmer to lay out rice plantations on larger scales than ever before. Irrigation ditches are ramifying in many directions, dams are in course of construction, and vast areas will soon be flourishing with rice. At one fazenda I found a young Brazilian, who had recently returned from his educational training in United States agricultural colleges, clad in khaki with sleeves rolled high, superintending the construction of a dam that will irrigate more than 200 acres of rice land. Only one case is here cited. It tends, however, to illustrate how Brazilian planters are reaching out for crops other than the time-honored rubber and coffee. Instead of importing rice, Brazil will soon offer it to the world.

Traveling across Uruguay by train and stagecoach reveals stock-raising activities and agricultural advancement, and brings one in touch with the country's 35,000,000 live stock and the picturesque cowboy who attends them. Most of Uruguay's lands are privately owned, wire fencing has taken the place of imaginary lines, railway mileage has lengthened gradually rather than spasmodically, and there seems to be comparatively little depression caused by the troubles of Europe.

Uruguay claims "the greatest kitchen in the world" at Frey Bentos, and those who inspect the gigantic plants located there, where more than 2,000 animals daily are turned into extract, are not inclined to dispute the claim. Durazno, Rivera, Paysandu, Salto, and other towns have recently extended and paved their streets, and the modern automobile is seen everywhere in increasing numbers. Some of the people, to be sure, are land poor, but few will sell any portion of their estates.

In the capital city, Montevideo, I found many merchants selling American-made goods. The proprietor of one large department store said his stock consisted of 80 per cent American goods, and that if he could procure the desired articles his whole stock would come from the United States.

I found Argentina's eight meat-packing plants quite active. The new Armour establishment at La Plata, the most modern slaughter-house in South America, was working a thousand men, and many tons of meat were held in cold storage awaiting shipment to Europe. "We are seriously handicapped," said one of the officials who showed me over the plant, "by lack of ships to carry our product to world markets. The demand for food is active, our facilities are enormous, but sea transportation is sadly lacking."

A few hundred miles southward, in the Bahia Blanca region, I met seven or eight American mechanics. They had been busy for weeks assembling several hundred wheat harvesters that had arrived from the United States. Moderate rainfall and a fair season had given the

SCENE ON A RANCH IN URUGUAY.

Urnguay, the smallest of the Republics of South America, has nearly 35,000,000 live stock. The slaughtering of animals for food has been active and the demand in foreign markets for the Uruguayan prodncts is constant and increasing. The above scene represents some of the 25,000 cattle on the Nueva Urehlem ranch, on the Midland Railway.

wheat growers of the country great encouragement. The American salesman had been over the ground and knew the meaning of a full harvest, and the self-binders in hundred lots told the story of the salesman's success; while the ripening grain over leagues and leagues—not acres—of fertile lands proclaimed in advance the delight of the planter.

"How long have you been bringing harvesters to the Argentine?" I inquired of the American in charge of the "setting up" gang. "For fifteen years I have been more or less in Argentina, and for several years I made the country my home. I now return to the United States once a year, in order to keep in close touch with our factories, so that I am traveling a considerable portion of the time. Had I purchased land over which I now start the American binders my fortune would be ample to-day. Ten, eight, or six years ago this land could have been bought for a trifle. Later, the railways came along and land values increased until the present prices prevail. However, in following the binders over the endless pampas, often spending weeks with the hospitable hacendado (farmer), I am convinced that a man with a fair amount of capital can still secure lands at most reasonable prices. It is sold in vast tracts rather than in small farms, as we know them in the United States."

The writer was greatly impressed with the lumber possibilities of the Gran Chaco. French capital has constructed a railroad through several hundred miles of the Argentine section of this vast region, and it is truly interesting to see how the settler has followed the railroad. If traveling from the north, one enters the Argentine Chaco at Barranqueras, a little settlement on the Paraguay River. Thousands of quebracho logs lie in every direction, and the picturesque ox team with its new load is constantly adding to the supply. The logs are loaded upon steamers and start down the river to Buenos Aires and the markets of the world. For two days one travels southward over the Santa Fe Railway, and practically every station is a lumber yard on an extensive scale. Unfortunately the troubles of Europe have checked the lumber industry, and at many stations there are logs ready to ship, but the necessary capital is not forthcoming. Another sign of Chaco wealth is fruit growing, which has been developed to a considerable extent in the vicinity of Resistencia. There are orange and banana groves that compare favorably with those of older sections, a fact that foreshadows similar industries on a larger scale as capital advances railways into the forest.

One of the pleasant sights for the traveler on this French-built railway is the profusion of flowers. There are acres and acres covered with red, yellow, and white lilies, wild verbena, brown-eyed Susan, chicory, etc., which often cover the track, and the train thus passes over nature's attractive and perfumed carpet.

ONE OF THE NEW HOTELS OF SOUTH ARGENTINA.

Argentina has a number of new and excellent hotels, such as those at Rosario, Santa Fe, Corrientes, Concordia, and other places, not to mention the many splendid hotels of the capital city. The Hotel Sud-Americano, at Bahia Blanca, shown in the picture, is modern in every particular.

ONE OF THE NEW STEAMSHIP PIERS AT BAHIA BLANCA, ARGENTINA.

This thriving city, the metropolis of southern Argentina, is the outlet for a vast agricultural region stretching westward for hundreds of miles. The city has three distinct ports, one of which is shown in the picture. Bahia Blanca has very broad streets and in general appearance greatly resembles Salt Lake City of the United States.

PARAGUAY'S UNTOUCHED TIMBER LANDS ALONG THE UPPER PARANA RIVER.

A mighty current is the upper Parana as it courses through virgin solitudes. Here and there man has made the beginning of commercial development by clearing the woodland and planting the sawmill. Paraguay's most prosperous little port along the river is Nacundoy. The picture was taken from the Argentine side of the river; in the center is one of the steamers which bears freight and passengers up and down the river.

American travelers who seek unfrequented paths and forests primeval will find the journey to the Iguazu Falls quite interesting. A few days' voyage on a little steamer sailing from Posados lands one at Port Aguirre, where food and comfortable cots are provided. Ten miles' ride by either mule or a primitive coach through virgin solitudes brings the traveler to one of the world's greatest cataracts. Comparatively few persons have viewed these wonders, owing to their inaccessibility. The closing of Europe, however, to tourists and travelers has turned the tide southward, and the officials at Port Aguirre are preparing to receive three tourist parties from the United States. I also found that one American woman traveling alone had visited the Falls recently and returned to Buenos Aires pleased with her experiences, even if they were primitive to a degree.

Far away in the heart of Paraguay I met a young American. His parents reside in Buenos Aires, and in surprise I asked the young man what induced him to live in the jungle with practically no companions. "I am here," he said, "growing up with the cattle. I rented land at a nominal sum and stocked it with a few cattle. I now have more than a hundred head, and some of them I shall soon drive to the Paraguay River for shipment to outside markets." "What a lonely existence you must lead," I volunteered. "Yes; I am far away from the life of city or village. At times I have a strong inclination to give up the forest and its prospects and return to settled regions. Loneliness throws a spell over one and in time he becomes a child of the 'brush' and the ignorant natives his only companions. In a few years, however, I shall go back to Argentina; in the meantime I find relaxation in an occasional visit to near-by settlements or to our largest city, Asuncion, where one hears news from the outside world and mingles with friends and acquaintances."

Bolivia is always interesting, and the present trip was made thither over the new railway from Arica to La Paz, a shorter but quite as picturesque route as the other two railways from Antofagasta and Mollendo, respectively.

Railway construction when the world is more or less unsettled by the troubles of Europe is not likely to be active; yet, far to the southward in Bolivia many laborers are leveling a route over hill and mountain, carrying the iron rails of Bolivia to join those of Argentina at La Quiaca. A year or two, possibly sooner, unless unforeseen causes stop the work, we may expect to ride by rail from Bolivian to Argentine capitals, thereby casting aside the primitive stage and its relay of mules which now transports the traveler between the two railheads. The completion of this gap of 140 miles will unite by rail the Pacific at Mollendo and the Atlantic near Buenos Aires, with the exception of 125 miles steamer service across Lake Titicaca. Then another transcontinental railway will be added to South America's trade and traffic facilities—a 2,000-mile route through rich and varied

BOLIVIAN COMMERCIAL ACTIVITY.

Upper: A greater demand for Bolivia's mineral products has renewed the energy of companies operating mines. The scene depicts a region near Corocoro and some of the ore awaiting shipment. Lower: A section of the port of Guaqui, Bolivia's chief shipping center on Lake Titicaca.

sections; furthermore, a route which will offer all-the-year service from the Pacific to the Atlantic. Last year, which was not an unusual one regarding snowfall, the trans-Andine was blocked with snow for three months. Had the Bolivian-Argentine road been completed, hundreds of travelers and tons of freight would not have been forced to the turbulent and long sea voyage via Magellan.

In visiting leading export houses I learned that Bolivia's products have never been in greater demand than to-day, and shipments are accordingly quite heavy. They would be greater were more ships available to transport these products to foreign lands.

At San Antonio the construction work on Chile's new port is progressing rapidly, hundreds of laborers being employed. Probably within a few months this port will be opened, and as rail connection with Santiago is already established, the place is destined to grow. Scores of modern houses, a fine new hotel, a large flour mill, an excellent bathing beach with good hotel accommodation are some of the enterprises and attractions.

At Chuquicamata, in northern Chile, I was greatly interested in the work of the Chile Exploration Co., an American corporation that has within the last three years made the barren mountains resound with the song of business activity. Centuries ago nature deposited the minerals, and from time to time man has sought to extract them from the earth. Not until the American company, however, secured concessions and began work on a large scale have the operations been so promising.

Chuquicamata copper ore is of low grade, but by the application of modern methods and unlimited capital the mountains have been made to yield abundantly and profitably.

The business of the mines has developed a town of about 5,000 people, the majority of whom are laborers from various sections of Chile and from foreign countries. The little colony of Americans numbers from 350 to 400. They are the directing force, with Mr. Fred Hellmann, of South African mining fame, as general manager.

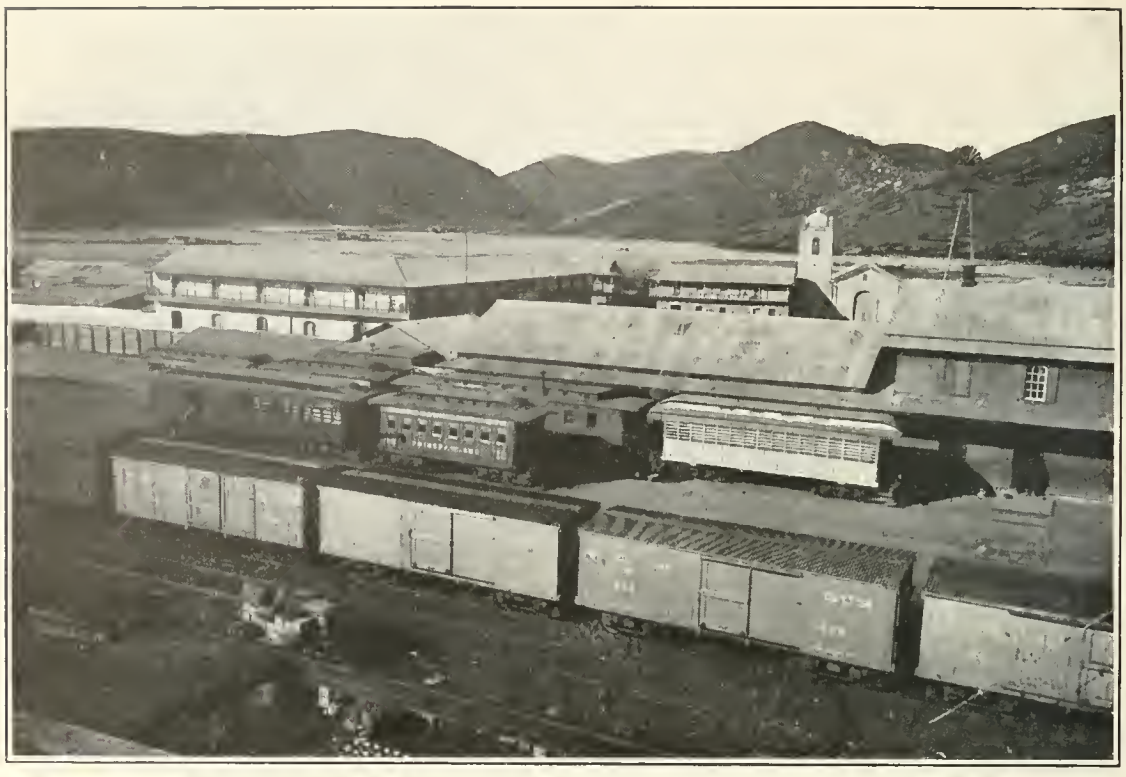
Chuquicamata is in many respects a model town. The houses occupied by the Americans are modern structures and well adapted to the desert in which they are located. Active railroad yards, machine shops, great reduction plants, hospitals, mining operations, stores, offices, recreation grounds, and an array of peoples and costumes that cause the visitor to look on in pleased surprise.

"How has so much been accomplished in so short a time?" I asked the general manager. His reply was short and to the point: 'Unlimited capital and able men."

The answer that came to me in the barren sands of Chile reminds one that numerous other places of South America are simply waiting for foreign capital to cause industries to spring forth with probably just as much success as the magical Chuquicamata.

BUSY DAYS IN VALPARAISO, CHILE.

The water front of Chile's chief port presents unusual business activity. In the center of the picture we see thousands of bags of imported flour; to the right there are many tons of coal recently unloaded from foreign ships, and on the extreme left the powerful cranes are unloading various kinds of machinery needed by Chilean industries. A few hundred miles farther north the scene is reversed, and the Chilean ports are exporting raw products in vast quantities.



JULIACA, A RAILWAY JUNCTION IN SOUTHERN PERU.

This station, a short distance from Lake Titicaca, shows some improvements over conditions a few years ago. The road from the lake to Cuzco taps at this point the railway that climbs the mountains from the port of Mollendo.

A CONSIGNMENT OF TYPEWRITERS ARRIVING IN LIMA, PERU.

Typewriting machines of all makes are finding an enlarging market all over South America. The American machine is far in the lead and all classes are popular with the native as well as the foreign business house.

When Europe's war began, the nitrate industry of Chile practically ceased, and thousands of workmen and their families were facing serious consequences. I spent several weeks in the nitrate fields and learned that the industry is gradually attaining its normal output. No desert land of the world, perhaps, bristles with life and activity as does Chile's nitrate region to-day. The country is bare and brown. All sunshine and no rain have caused everything, including man and beast, to partake of the color of the land. Here and there I found an American—sometimes an official, sometimes a workman—but all rendering a service in helping to supply the world with this commodity.

The change in Antofagasta has been magical. Within 18 months the paving of nearly 400,000 square meters of streets and sidewalks has added 50 per cent to the general appearance of the city. Two American companies—one from San Francisco and one from Philadelphia—have transformed the former dusty roads into excellent modern streets. New streets and sidewalks shamed the property owners into improving business houses and private homes; the old mule car has passed and the motor vehicle provides transportation until an electric service can be established. A French company has built the city a system of sewerage, and the tax on nitrate provides a public revenue of no mean importance. Antofagasta is prospering because two-thirds of the nitrate companies of that region are working full time.

One of the advanced commercial steps noted in Peru is the new museum in Lima, an organization which recently opened its doors for the display of every variety of product or manufacture of Peru and other countries of Latin America. Although not yet fully supplied with exhibits, a nucleus is established and the building is a very interesting place to visit, especially to those studying within the realm of trade possibilities. This new museum and its products will furnish subject matter for a lengthy article, but in passing mention of rugs, furniture, hard and soft woods, hats of straw and felt, cereals, earthenware, might be listed as being among the important exhibits of home grown and home manufactured products. It is really amazing to examine the minute detail and the splendid workmanship of Peruvian natives of far interior sections of the country, whose handiwork is shown in the museum. The new institution will not confine its work to Peruvian products, but is exhibiting those of neighboring countries, all of which will be augmented from time to time.

Five years ago the tourist who wished to view the ruins of ancient Panama found it necessary to wade deep into tropical growth after a long tramp along the burning sands of the seashore. The coach from Panama City could not take one near the actual ruins. Today an excellent automobile road leads directly to the famous ruins;

Photo by W. V. Alford.

ANDEAN RAILROAD SCENE.

Probably no section of the world presents a more appalling wall of barren grandeur than the rainless region of the Andes. The Central and the Southern Railways of Peru penetrate these mountains and the traveler always has before him a series of picturesque and unusual views. The above scene is on the line of railway to Oroyo and is about half a day's journey from Lima.

furthermore, the authorities have cleared and cleaned the surroundings, so that the visitor not only inspects the "ivy-mantled tower," but he may wander amid a number of one-time great edifices to his heart's delight. The ancient road over which the Spanish conquerors transported precious metals from Inca lands to Spain and elsewhere may be followed for miles—ancient and modern lie side by side.

"I have been greatly interested in traveling over your newly made roads—they are a tropical delight," I said to the President of the Republic, who received me with the usual Latin courtesy. He seemed pleased that the foreigner could appreciate the efforts now being put forth to give his country a series of modern highways. In Panama the lesson and example set by American road builders has been followed by the local government, which employs convict labor in constructing highways. Miles and miles have already been built and the work will be continued.

What does one gather by wandering over the continent of South America to-day? What, briefly, are the conservative conclusions formed by viewing both business depression and commercial activity?

A study of some of our most prominent enterprises that are operating at present in South America shows that their success is based largely on their ability to stand firmly, even if first losses were shockingly large. In other words, a long and serious campaign with ample financial backing is demanded; and future business rather than present-day profits must be the slogan of those who would succeed.

An American company has put thousands of people of Buenos Aires at work, chewing gum; everywhere boys and men clad in immaculate white with gold lace and brass buttons are met. Scores of these uniformed agents were put to work selling the American gum; the expense has been enormous, and the question on many lips is, Will it pay? Undoubtedly, the people are buying the gum and may continue to do so, but some class of advertising must continue to keep it before the people. The entry into the field, however, doubtless cost the company more than the profits for several years.

Three years ago an English corporation opened a store in Buenos Aires. The first year's loss, so the writer was reliably informed, was $150,000; the second year the loss was also large; but outwardly to-day it is one of the city's most prosperous as well as popular establishments. Possibly the business has passed through its growing stage and has "arrived," by returning at least a margin of profit to its proprietors. It is this stick-to-it-ness—the backbone—capital—that is winning trade and turning the wheels of commerce.

Much of the depression to-day would quickly pass if there were ships to transport raw products to the markets of the world. Capital, then, followed by facilities for reaching world-wide markets, are crying needs.

CENTRAL AMERICA OF TO-DAY—EL SALVADOR[1]

A PROMINENT writer in describing his impressions of the Republic of Salvador said, "the feature of San Salvador, and of all of El Salvador, and the surprise of it, is its positive delight as a place to visit." And truthfully he might have added that as a place to live in it is equally agreeable. Nearly everyone who has had the privilege of spending some time in that country voices these sentiments. There is something unusually pleasant and cheerful about its atmosphere. Like its neighboring sister countries it is also a land of sunshine and flowers, but in addition it is one of smiles and happiness.

From the moment you land on the hospitable shores of Salvador you are impressed with the smiling faces of the people, the contagious laughter of the children, the ease and care-free manner of daily life, and the spirit of independence that seems to be in the very air. And once you come into more intimate contact with the people themselves, you may be sure to enjoy hospitality that is as delightful as it is natural; to find that degree of refinement and culture in the every day life of the representative classes that bespeak the broadening influence of travel and study in other lands; and to notice the ready acceptance by these people in both official and private life of all that is new, progressive, and up to the minute.

Salvador is at once the smallest, territorially, and yet the most densely populated country of the Western Hemisphere. Perhaps in these physical conditions you may read the reason why it is so active and prosperous, for agriculturally and even industrially, it has made remarkable progress. Cultivation and labor are evident in all save the very few arid patches of country. It is, moreover, the only country of the Central American group which does not possess a seaboard on both the Atlantic and the Pacific.

The approach to the country from the Atlantic side is through Zacapa, in Guatemala, overland to the frontier. On the Pacific side, however, there are a number of ports, the principal ones being La Union, La Libertad, and Acajutla. At La Union you find good docking accommodations at the wharf, and a railroad which will ultimately connect the port with the capital is rapidly being completed. At the ports of La Libertad and Acajutla, however, lighters are still used as these places are open roadsteads and vessels anchor a mile or so at sea. It is here that you again may enjoy the exciting,

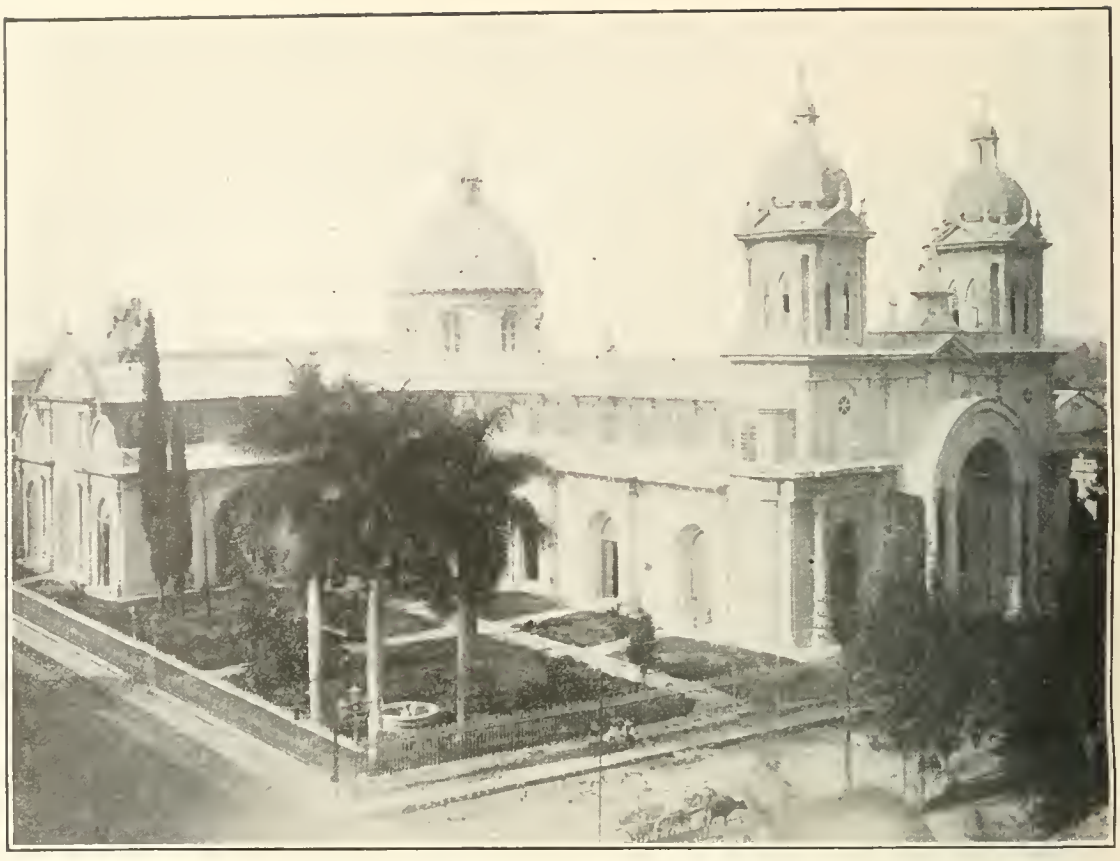
[1] By Harry O. Sandberg, of Pan American Union staff.

WHARF AT LA LIBERTAD, SALVADOR.

La Libertad is a small but well-formed roadstead and the outlet for a rich agricultural district. Surveys have been made for a railroad which will connect it with the capital, a distance of about 24 miles. It has a strong and well-designed iron pier, two large covered warehouses, and the necessary steam cranes and apparatus for loading and unloading lighters.

EMBARKING AND DISEMBARKING AT ACAJUTLA, SALVADOR.

This novel method of embarking by means of a derrick, a basket, and a lighter obtains at several points on the Pacific coast of Central America, where there is no safe harbor and vessels anchor some distance away. It is quite exciting to be hoisted up or down in this fashion, and the sailors who engineer the operation display remarkable skill in lowering the basket just at the moment that the lighter rests quietly on the waters before being lifted by the continually rising swells.



THE CATHEDRAL AT SAN SALVADOR.

The cathedral is a good example of Latin American ecclesiastical architecture, but is distinguished from many others by the feature of pointed arches instead of the usual square or rounded ones. It is an imposing edifice and contains some handsome ecclesiastical plate and beautiful mural decorations.

THE NATIONAL PALACE AT SAN SALVADOR.

Classic in style of architecture and stately in appearance, the capitol of Salvador is an imposing structure and one of the most dignified public buildings in Latin America. It occupies an entire square, is built of reinforced concrete, and in it are housed the offices of many of the executive departments.

though sometimes unnerving experience of being lowered into the lighter and hoisted onto the wharf by means of a derrick and cage-like basket. From Acajutla to San Salvador, the capital, there are splendid railroad facilities, while the port of La Libertad is also to be connected with the capital by means of a railway. A survey for this line has but recently been completed.

In actual figures, the Republic of El Salvador has an area of 7,225 square miles, about the size of the State of New Jersey, and includes a population within its borders of 1,254,151. Its climate varies from the usual tropical heat to the pleasant coolness you experience at the capital and in the other towns of the higher mountain regions. The topographical outlines of the land are very impressive and as you approach the country for the first time through the Bay of Fonseca you are greeted by the grim, yet strangely beautiful sight of a dozen great volcanoes standing almost side by side like a long row of sentinels. These volcanoes have done considerable damage in bygone days, but the people with ever ready optimism and genuine patriotism have rallied again and again and rebuilt the disturbed places so that to-day the country presents a rather attractive front of one and two story houses of light frame work covered with tinted clay or plaster, embossed and pressed steel interiors, and numerous buildings of the more substantial reinforced concrete.

Like most other countries, Salvador, too, felt the financial and economic upheaval caused by the European war but she is gradually recovering from the first effects. For the year 1914 the imports decreased from $6,098,474 of 1913 to $4,958,624; but the value of exports took a decided increase from $9,411,112 in 1913 to $10,796,495, so that the foreign commerce for the first year following the war increased nearly $250,000, an unusual showing when you consider that the commerce of most other nations suffered heavy decreases.

To meet the temporary shortage of revenues caused by the decrease in import duties, a new income-tax law was passed. The Government, under the able administration of President Carlos Meléndez and his excellent cabinet, followed a prudent retrenchment policy and introduced certain economies, so that the progress of the country was not retarded, business transactions maintained a firm basis, and the important public works were continued. Along with this enlightened condition the recently organized Chamber of Commerce of Salvador directed its efforts to cooperate with the Government and offered suggestions for the improvement in mercantile and agrarian laws, customs duties, regulations, as well as for developing greater commercial, financial, industrial, and agricultural activity.

One of the very serious considerations of the economic status of Salvador is the transportation question in so far as it concerns steamship facilities. At present two steamship lines, the Salvador Railway Co.

MONUMENT TO LIBERTY IN DUEÑAS PARK, SAN SALVADOR.

This is one of the most imposing and artistic monuments in all Central America. It was dedicated on November 5, 1911, during the festivities commemorating the one hundredth anniversary of the first Central American cry for liberty. It is of bronze and marble and stands a little over 50 feet high. Surmounting the top is a figure of Glory; at the base one of Liberty. The faces carry the busts of Delgado, Arce, Rodriguez, and the national coat of arms. The corners of the pedestal are also artistically embellished.

DUEÑAS PARK, SAN SALVADOR.

One of the many parks that you find in nearly every city and town. Flower beds, tropical palms and shrubs, comfortable benches, the band stand, and some monument or statue combine to make them truly attractive, and the people make the most of these recreation spots.

STATUE OF GEN. MORAZAN IN MORAZAN PARK, SAN SALVADOR.

Salvador has many artistic and appropriate monuments erected to the memory of its brave sons and distinguished citizens. The more imposing ones include the statue dedicated to Gen. Gerardo Barrios, soldier and patriot; the equestrian statue of Gen. Morazan; and the Liberty Monument, shown elsewhere.

and the Pacific Mail Steamship Co., handle the ocean traffic, but the sailings of both are irregular and uncertain, and Salvador is experiencing the same difficulties that other Pacific coast countries are having. In the matter of highways and railroads the country has fared much better. The Oriental Railway from La Union to the capital has been completed to Zacatecoluca, a distance of 97 miles, and is already expediting the shipment of crops and products. Three routes have been submitted for the proposed railroad from La Libertad to the capital, while work on the line of the International railways of Central America from Santa Ana to the Guatemalan frontier, which will form a link in the Pan American Railways, is well under way. Nearly 1,500 miles of national roads connect the important points of the country with each other, and over 5,000 miles of municipal roads and highways, all maintained in good condition, help solve the question of transportation and communication. The good roads movement has received added stimulus with the increasing number of automobiles and the organization of an automobile association. One especially fine road is being built from the capital to Santa Tecla, a distance of about 10 miles, which is developing into a city of suburban homes.

To-day you will also notice considerable building activity in the capital as well as in other towns. Some of the structures are replacing old ones, but many are being built to meet the growing needs of the community. The municipal theaters at Santa Ana and at Sonsonate and the new church at Santa Ana are being rapidly brought to completion. At the capital city the skeletal framework of towering peaks indicate the site of the newest church; the large municipal government building is being remodeled and enlarged; two new theaters are almost completed, one national and the other a private enterprise. Both these buildings are of reinforced concrete, artistically designed, and make handsome additions to the public structures of the city. Their completion will make four playhouses at the capital. For a population of 65,000 this is a pretty good showing, but concerts, plays, and "movies" are as much a part of the social life of Salvador as of other countries. The national theater is equipped with balconies, dance floors, salons, and will rank as one of the most attractive theaters in America. Two extensive operations in public utilities are relaying of the overhead telephone wires underground, and a deep-well boring outfit which has sunk shafts at various points in search of artesian wells, petroleum, and other such substances.

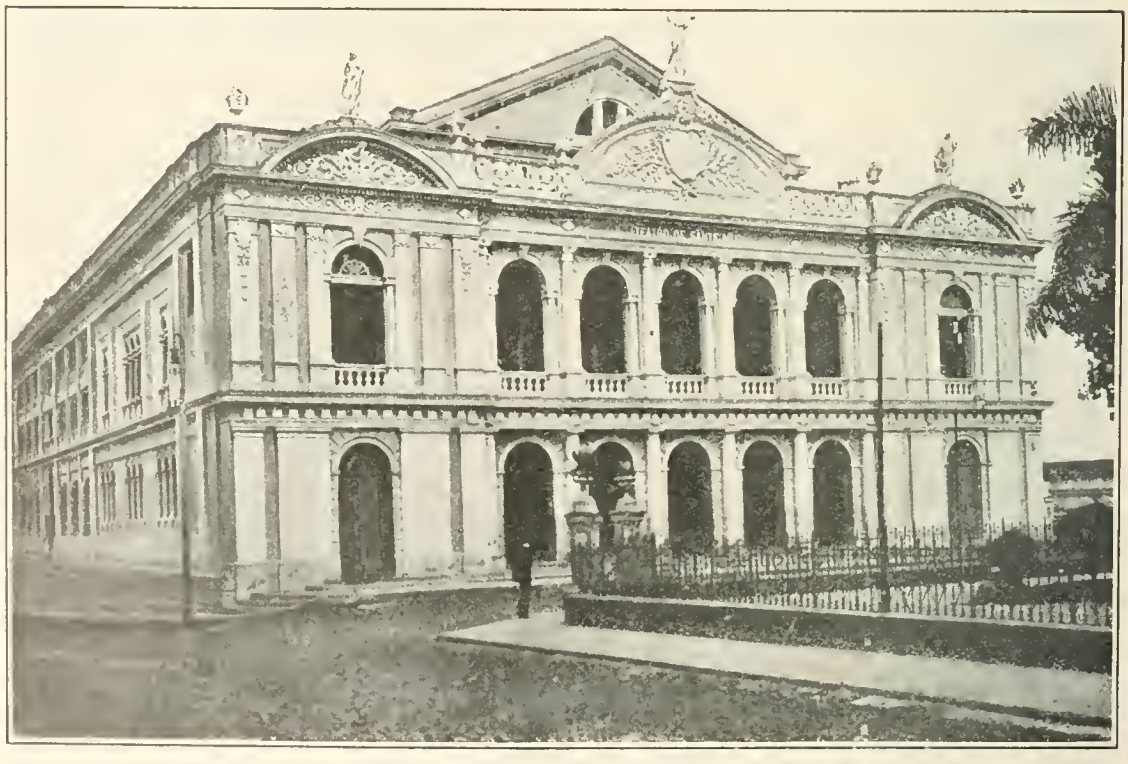
Among the general characteristics of the country which will perhaps strike your attention forcibly are the extent to which the English language is spoken by the people; the number of young men and young ladies who have studied and are now studying in the schools and universities of the United States; the display and sale of well-known and widely advertised goods from the United States; and

STUDENT ACTIVITIES OF SALVADOR.

In this picture are shown a company of cadets from the Polytechnical Institute; a scene in the classroom of the practical school for girls; and school children on parade on Flag Day. Education is free and compulsory and occupies a prominent place in the activities of the administration. There are about 875 primary schools with an enrollment of nearly 50,000 children. The secondary educational system includes 8 institutions with 2 new ones under establishment, a modern institute at Santa Tecla, and a "colegio" at Usuluteco. In addition there are the girls' normal school, the men's normal school, the practical technical school, and the business courses in connection with the National Institute, and, of course, the National University.

NEW MEDICAL SCHOOL BUILDING, SAN SALVADOR.

Not far from the famous Rosales Hospital the new medical school has just been completed, a large, airy structure of reinforced concrete, and thoroughly equipped with laboratories, lecture halls, and classrooms. The medical department is part of the national university.



THEATER AT SANTA ANA, SALVADOR.

Salvador seems to be a favorite visiting place for itinerant theatrical companies, and throughout the larger cities of the Republic there are attractive theaters to accommodate them. With a choice of an open-air band concert, a "positively first-time shown" reel at the "cinemos," or perhaps a comic opera at the regular theater, there need be little concern over the diversions offered of an evening.

the strong feeling of friendship and sympathy existing between these two countries. These factors are especially noteworthy because in Salvador there is quite a European influence, especially in the ownership of the principal business houses. But despite this fact the United States takes ranking place in the value of the imports bought by Salvador, and also enjoys first place in the matter of exports. Proximity is one advantage in favor of the United States; the superior quality of the United States made product is another; the inability to secure some European products on account of the war is also a contributing factor. $2,027,732 represents the value of Salvador's imports from the United States; $2,662,168 the exports. Both these totals can be increased when normal conditions are restored by intelligent effort coupled with a larger increase in the purchase of Salvador's products.

Agriculture and mining are the principal contributors to the wealth of the Republic, but as is natural in a country so thickly populated, the people have developed many native industries to satisfy their social and domestic wants. Within the country are made hammocks and many articles requiring weaving from fibers; the manufacture of textiles is successfully conducted, beautiful silk goods especially being produced from native looms. Saddles, shoes, and other leather goods are made; also cigars and cigarettes from native tobacco, and useful iron instruments. These do not offer complete competition with foreign-made products because the latter are of different grade and are in demand by different classes of society.

The great products of the country are coffee, gold and silver, indigo, sugar, rubber, hides, and the medicinally useful balsam of Peru. Coffee constitutes 80 per cent of the total exports and the country produces an annual yield of 750,000 quintals (quintal = 101 pounds.) Next comes gold and silver with an export value of over a million and a quarter. Indigo, for a long time one of the chief articles of export, has now given way to other products, as aniline dyes have replaced it as a cheaper substitute, so that to-day its export value is but $100,000. The balsam of Peru, with its misnomer, since you do not find it growing in any country of the world but here, and then in only a few parts of it, continues to figure as an important item of export, and the annual yield of this plant is sent chiefly to the United States and Germany. While coffee is grown in practically all parts of the Republic wherever the land rises between 1,500 and 4,000 feet above the sea, the production of balsam is limited to a strip of territory along the Pacific called "La Costa del Balsamo." The indigo plant is found in a number of the departments but thrives especially well in the districts of Zacatecoluca and San Miguel. Sugar cane growing is an industry for which the genial climate and bounteous soil are admirably adapted, and the cane is cultivated to a greater or less extent in all of the depart-

Photo by W. V. Alford.

BAGGING COFFEE ON A PLANTATION IN SALVADOR.

The value of coffee exported in 1914 was $9,017,700. This product usually represents about 80 per cent of the total exports. The crop for 1915–16 is estimated at about 75,000,000 pounds, of which 60,000,000 will be exported. There are approximately 211,000 acres planted in coffee trees in this country.

IN THE BALSAM FORESTS OF SALVADOR.

Balsam of Peru has always been the great natural product of the country. Its name is a tradition from the early habit in vogue during Spanish times of shipping American colonial things across the Isthmus of Panama, where they became mixed with those from the coast of Peru. To the pharmaceutics it is valuable because of its stimulating property on wounds: the cinnamic acid, one of its chief ingredients, has proved of service in tuberculosis. The tree is one of the beauties of a tropic forest. It has few branches on its trunk, but at the top it spreads out broadly. The blossoms are white, the fruit small and yellow in color. Besides the balsam, the wood of the tree is useful for furniture and construction work.

PREPARING BALSAM FOR SHIPMENT.

Gathering the sap and preparing the balsam are done in the same simple way to-day as they were generations back, and the method is as interesting as it is unique. The tree is scratched with a blunt instrument just enough to expose the inner bark. Pieces of cloth are attached to the exposed parts and the exuding sap is absorbed by the cloth. These are then collected and placed in boiling water to remove impurities and then the cloths are subjected to heavy pressure. The crude balsam thus squeezed out is put through a purifying process and then poured into tin cases of about 55 pounds each ready for shipment.

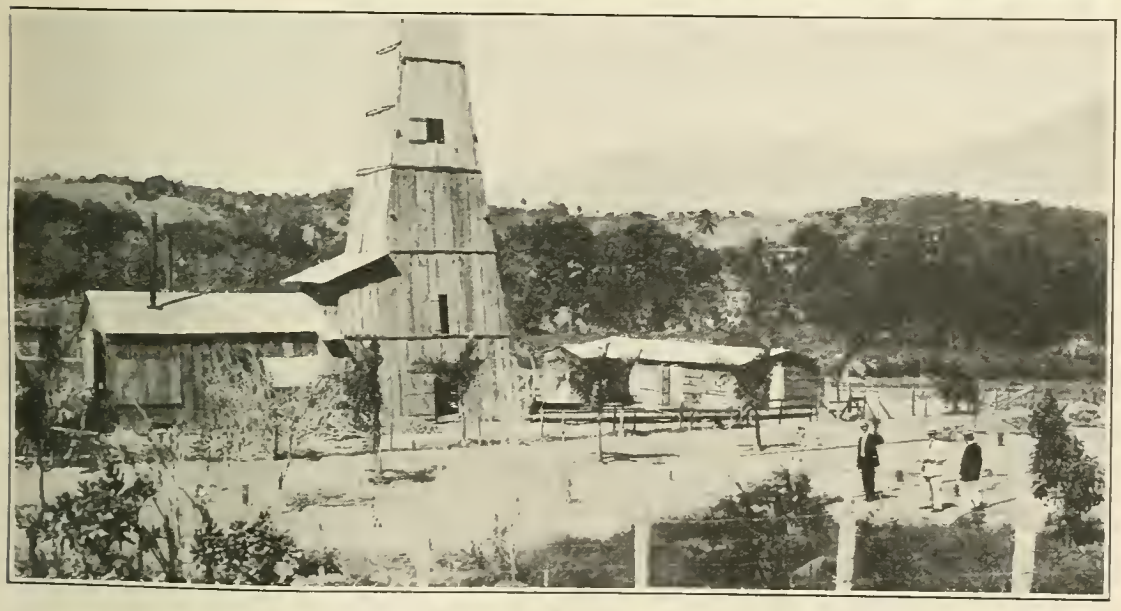
ments. Mines are found in most parts of the country, but the most productive regions are in the eastern section where rich deposits of gold, silver, copper, and lead exist. In the western regions there is said to be iron ore in great quantities. The Butter's Salvador mines at Santa Rosa, in the department of La Union, and the Divisadero mines in the department of Morazan, are perhaps the richest producing outfits.

Turning for a moment to the capital, you find here many opportunities for enjoyable life. Near by are a number of picturesque lakes, mineral springs, waterfalls, and attractively situated country homes. Ilopango, a 9-mile motor drive, is the week-end picnicing ground for many a party. It is the most beautiful of the Republic's volcanic lakes, and its calm, deep-green surface covers an area of nearly 25 square miles. Another pleasant trip is to the summit of Planes de Renderos, reached best on horseback, an ascent of several thousand feet above the city. En route you see various little towns, their bright-colored homes glistening in the brilliant sunshine, lying in the distance many thousand feet below. Here and there on the mountain ascent you find beautifully laid-out plantations and country estates. Before coming to the top of the hill you pass the tuberculosis sanitorium located in a very healthful spot; and while on the subject of health it is interesting to note that Salvador boasts of one of the lowest death rates in Latin America, due to strict governmental supervision and splendid hospital facilities throughout the country.

The ride from Acajutla to San Salvador is made by rail in coaches, comfortable, clean, and well ventilated. Arriving at the station you notice a spirit of hustle and activity. The carriage driver calls to have you take his vehicle; the newsboy rushes about yelling the names of his papers; the baggageman exhorts you to permit him to carry your trunks to the hotel; many people have assembled to see the train come in, perhaps to welcome friends or relatives; there is much embracing, still more handshaking and kissing, and you, as a stranger just gazing on, are perfectly charmed with the cheerful and pleasant manners of the crowd.

The drive to the main hotel is through Independence Avenue. This takes you through a wide boulevard, lined on both sides with numerous busts and statues of well-known historic characters as Delgado, Arce, and Porfirio Diaz; with allegorical statuettes, artistic urns and jars laden with palms and flowers, and stone lions, sphinxes, and similar forms.

In the city the principal public buildings are the National Palace, a handsome, solid structure of reinforced concrete, with artistic columns and embellishments, the entire design being fashioned after some palace in Spain. In this building are housed the greater number of the executive departments. The presidential palace, quite



GENERAL IMPROVEMENTS IN SALVADOR.

Top: Artificial lake at "Finca Modelo," the playground of the capital. Here in the afternoon you may witness a baseball game, a rugby contest, or tennis match, and see the little children romping around in the grass and sand beds. Center: One of the many bridges throughout the country connecting important points, bridging chasms, and adding charm to already picturesque scenery. Lower: The only deep-well boring apparatus in operation in Central America. Borings have been made at "Finca Modelo" and other points, and the company behind the project is hopeful of discovering not only water but petroleum and other valuable mineral products.

modest from the outside, is luxuriantly furnished within and makes an appropriate and dignified home for the Chief Executive. The post-office building, referred to as the Casa Blanca (White House) is an edifice of characteristic Spanish architecture with a corner tower. The building of the general treasury, the government printing office, the municipal palace, the National University, the new medical school, the Central Institute for Boys, the Polytechnical School, the various barracks, and the two market places, are all well appointed and equipped, and you find them highly interesting places to visit.

There is also, of course, the cathedral with its great portals and two towers; here are located the most melodious chimes in all of Central America, the gift of one of the foreign colonies. There are also about 10 churches in the city. An orphan asylum, an institution for the insane, the tuberculosis institute previously referred to, and the Rosales Hospital are among the charitable institutions at the capital. Indeed, Rosales Hospital is worthy of more than passing notice. Its great physical equipment is thoroughly organized; its apparatuses are of the very latest in medical science; and the admirable management of the wards and clinics are a tribute to the eminent medical men in charge.

Here you also find a number of attractive parks, usually with some imposing monument or statue as the central point. There is the band stand, and pretty flower beds are arranged in artistic fashion around the marble walks. In the evening the band concerts draw out great crowds, and long after the music has ceased groups of people remain about the park to quietly enjoy the soothing air of a tropic night.

What these parks are to the grown-ups in the evening, "Finca Modelo" is to the younger people in the afternoon. The "Finca" is a sort of park and playground, about 20 minutes by tramway from the center of the city. It has an artificial lake, pleasant gardens, a natural history museum with an interesting collection, driveways, and a campus for sports. But what will probably arrest your attention will be the shouts that come from the campus, English sounds strangely familiar and uttered with an accent that is perfectly delightful. You pause to listen, and you wonder if you really hear them or are just imagining them. These words sound like "poot dem over," "peetch de ball," "hom plat," and as you approach the campus you find a crowd of men and boys watching a real game of baseball, umpired usually by the amiable secretary of the American Legation, and coached by the energetic vice consul of the United States. Yes, baseball has gained a hold in Salvador, and the little chaps are playing it with the same enthusiasm and ardor as their older brothers. Off in another part of the field some boys are playing rugby, and still in another part is a tennis match, in which the young ladies participate. On the driveway you see

SCENES IN CHINAMECA, SALVADOR.

Top: Street scene in Chinameca. Center: Park and bandstand at Chinameca. Lower: The "Commandancia" or commander's office. Chinameca has about 12,000 inhabitants and is a typical town of Salvador. Clean, well-kept, and active, it possesses many modern buildings and busy shops.

VOLCANIC FORMATION ON LAKE ILOPANGO.

Ilopango, a delightful motor ride of about 10 miles from San Salvador, is a popular picnicking ground. There are two comfortable little hotels, and good bathing, boating, and fishing facilities. The lake has witnessed numerous remarkable volcanic phenomena such as the disappearance of a charming group of center islands and the formation of the peculiar ridges and hills like those in the illustration.

"THE LIGHTHOUSE OF SALVADOR."

Not far from the capital is the Izalco Volcano. About 125 years ago it rose out of the plain and gradually attained an elevation of nearly 6,000 feet. The volcano is almost continuously active, and every few minutes, with almost clocklike regularity, it sends forth a dense column of smoke which rises in the air and then gradually fades away as it ascends on high and passes off with the clouds.

some pretty turnouts, an automobile or two, and some horseback riders. Salvador is at play toward the end of the afternoon. As dusk approaches and you wend your way slowly back to the city, you will be joined en route by a friend or two, and together you stroll into the inviting halls of one of the exclusive clubs where the gentlemen are wont to gather in the early evening, and there amid genial surroundings you discuss the latest cable dispatches, talk over the events of the day, and then return to your home for the evening meal.

ORCHIDS IN THE AMERICAS[1]

A THING of beauty that is rare and difficult to obtain seems ever to have proved an irresistible lure to adventurous man. To possess it he will suffer the hardships of the highest mountain climb or risk the almost certain dangers of disease in tropic zones; he will dare death at the hands of savage enemies and pursue his quest far into the regions of unknown wilds. Now into the depths of shark-infested seas he dives with the hope of securing a lustrous pearl; then to the topmost Alpine peak he climbs for a rare specimen of the edelweiss. A glittering jewel in an idol's head may lead him to invade the sacred precincts of an Indian temple, or a beautiful flower lure him far into the primeval forests of Brazil, Colombia, or Peru. To this spirit of daring and adventure the civilized world owes not only its greatest geographic discoveries and important additions to its scientific knowledge, but also to it is largely due the discovery of many of earth's choicest things of beauty, things whose practical value may be but slight but whose appeal is to the artistic and esthetic sense and therefore at times almost priceless. Among all the things of fragile beauty that nature has produced perhaps none has greater charm and is more highly prized than that radiant, gorgeous flower of rainbow colors and softened shades and tints and infinitely varied forms—the orchid. For its rarer species men have traveled far, suffered much, and often died; and yet in its commoner forms few flowers are more widely scattered throughout the world. Orchids are found in one form or another in all parts of the world except the coldest and most arid, but the most beautiful and varied forms are native to the humid forests of the torrid zones, especially in the tropical countries of South and Central America, in India, Ceylon, Sumatra, Borneo, Java, and other islands of the Indian Ocean and those of Melanasia. These tropical species are as a rule epiphytal, while those of colder climates

[1] By Edward Albes, of Pan American Union staff.

A NATIVE ORCHID COLLECTOR IN COLOMBIA.

"Many of the natives depend upon orchid collecting for a living, and when an agent for some great horticultural importing house reaches one of their villages all other activities are for the time being suspended, and men, women, and children scour the forests for the valuable plants."

grow from the ground in meadows, woods, and swamps. Doubtless the fact that many of the more beautiful of the many genera are air plants first drew the attention of European botanists to the Orchidaceæ, for only lichens and mosses were wont to thrive on the trunks of trees in the section of the world with which most of them were then familiar. Another striking and unusual feature of these flowers lay in the fact that they could be fertilized for reproduction only through the agency of insects, a feature first noted by the botanist Sprengle in 1793 and subsequently verified by Robert Brown in 1833 and later by Darwin, Müller, Gray, and others. This peculiarity may be best explained by giving a brief description of one of the simplest species, the more complicated forms being but special developments of the various parts under differing conditions.

The leaves of orchids present a great variety; some are thin and of but short duration, others are thick, fleshy, and persistent. While some genera present a broad expanse of foliage, in others the leaves are linear, or long and cylindrical like a piece of whipcord. The flowers are terminal and solitary in some, while in others they are disposed in a raceme or panicle. The structure of these flowers, however, is so unlike that of any other flowers that a plant of this family is readily recognized.

The flowers are six-parted; the three outer parts, corresponding to the calyx, are usually petal-like, and these with the three inner parts, or corolla, are often so unlike in size and shape that the flowers are usually conspicuously irregular. This irregularity is mostly due to one of the three petals, which in the flower appears lowermost; this is called the lip (labellum), and is usually quite dissimilar to the other two petals. In the flower of the greater green Orchis, which may be taken as an example of the simpler structure, the three sepals, the upper larger than the other two, are much broader than the petals, two of which point upward, while the third, the lip, extends downward like a long flat ribbon; in other species the lip spreads out like a broad fan which is sometimes lobed and beautifully fringed; in others it has its edges turned in to form a sort of tube, or in some cases (the lady's-slipper, for instance) it may be distended to form a large inflated sac. It is upon the petal called the lip that the most beautiful coloring and the strongest markings are found. The base of the lip is frequently hollowed out to form a sac or spur which secretes honey, which in some species is very long and conspicuous, in some cases being twice as long as the lip itself. In the center of the flower are the reproductive organs which in this family consist of one and sometimes two stamens, united with the pistil, or rather the style, the two being blended into a column. In the greater green Orchis this column is in the center of the flower and consists of a large anther united with a concave stigma seen between its widely separated cells. In the majority of the orchids the pollen is agglomerated in two or

COLLECTING AND CLEANING ORCHIDS IN VENEZUELA.

Eugène André, an English naturalist and botanist residing on the island of Trinidad, some years ago undertook a hazardous journey through the wilds of Venezuela and the Guianas for the purpose of collecting rare specimens of orchids for the celebrated Rothschild collection. He succeeded in gathering many valuable species, but among the natives who accompanied him on the expedition several died from fevers, starvation, and exposure in the jungles, André himself narrowly escaping the same fate. The above picture shows André cleaning orchids preparatory to packing them for transportation to the coast.

more pollen masses (*polinia*), in which the grains are held together by minute elastic threads, or are in a compact waxy mass. These pollen masses, which are lodged in the cells or pockets of the anther, have often a little pedicel or stalk, at the base of which is a viscid disk or gland; this, coming in contact with an insect visiting the flower, adheres to it, and the pollen mass is thus withdrawn from its pouch and carried by the insect to another flower. In fact the structure is such throughout the whole family, varied admirably in different genera, that the flowers can not be fertilized except through the aid of insects. It remained for Darwin, in his "Fertilization of Orchids" (1862), to present the subject in all its details, showing the wonderfully varied mechanism of the different genera, and pointing out the beneficial results from the intercrossing attending this method of fertilization.

In flowers having a structure similar to that of the greater green orchis the act of fertilization is very simple and may be accomplished by the use of a lead pencil or other pointed implement. The disk at the lower end of the pollen mass is so exceedingly viscid that when the pencil is thrust into the throat of the flower and withdrawn, like an insect's proboscis, one or both of the pollen masses are brought out with it. Under natural conditions the pollen is then carried by the insect to another flower where in its search for the honey the pollen is transferred to the stigma of this second flower.

The number of species of orchids is greater than that of any other of the monocotyledonous order of plants, amounting to something over 15,000, which have been classified under about 400 genera. Perhaps this is largely accounted for because of the constant and unremitting search for new species or specimens of varieties already known but rare, due to the demand for purposes of cultivation. The culture of orchids began in England as early as 1820; in the United States it was not until after 1865 that the fad became at all general. Once started, however, the craze for possessing rare and beautiful specimens took hold of the wealthy amateur horticulturists, and the business of importing the plants soon assumed large proportions. Horticultural importing houses and sometimes wealthy individuals began the practice of employing daring and adventurous men for the sole purpose of scouring the remote and unexplored sections of the world where orchids were supposed to grow, in order to secure the rarest or most beautiful specimens. It is said that there are at present large horticultural establishments in England which import every year from 100,000 to 200,000 plants. Fabulous prices have been paid occasionally for a single flower, while in 1880 one collection sold for $70,000.

Partly because of the financial returns incident to the successful collection of rare specimens, partly to gratify their wanderlust, and

Courtesy of W. A. Manda (Inc.).

COLLECTING ORCHIDS IN COLOMBIA.

Top picture: The mountains near Medellin, Colombia, where many of the finest species of orchids are found. Center and bottom: The dried orchid plants, packed in cases and transported on the backs of oxen and mules to the nearest seaport for shipment to the United States or to Europe.

perhaps even more for the sake of adventure and the excitement of the pursuit, a number of men took to orchid collection almost as a profession. Some of these gained a wide reputation, one of the most famous being a Bohemian botanist by the name of Roezl. Many romantic tales are told in regard to his experiences as a collector and traveler, and Mr. Frederick Doyle, an orchid expert and himself a great collector, writes of Roezl as follows:

> Roezl will be gratefully remembered so long as science and horticulture survive. I have heard it alleged that he discovered 800 new species of plant or tree. It is credible. * * * A wise regard for his own interest confined him almost to orchids in the later years. But in his catalogue of achievements I find new lilies, new conifers, fuchsias, agaves, cacti, begonias, saxifrage, dahlias, convolvuli, tropaeolums, tacsonias—a multitude, in fact, beyond reckoning. In one expedition he sent 8 tons of orchids to Europe; in another, 10 tons of cacti, agaves, dion, and orchids. The record of his travels is startling; and it must be observed that Roezl's first aim always was to escape from the beaten track. His journeyings were explorations. Many an Indian tribe never saw a white man before, and some, perhaps, have never seen one since. Mexico was his first hunting ground, and thither he returned more than once; Cuba the second. Thence he was drawn to the Rocky Mountains, California, and Sierra Nevada. Then in succession he visited Panama, New Granada, Sierra Nevada again, California again, Washington Territory, Panama again, Buenaventura (Colombia), the Cauca Valley, Antioquia, northern Peru, crossed the Andes, returned to Buenaventura, and thence to Europe. Starting again, he searched Colorado (then a Territory), New Mexico, California, and the Sierra Madre; worked his way to Caracas, thence through Venezuela, crossed over to Cuba, then to Vera Cruz, explored the State of Oaxaca, Mexico, sailed thence to Lima, Peru, crossed the Andes again to Tarma and Changamaga, back into southern Peru, wandered as far as the Lake of Titicaca, searched Bolivia, traversed the Snowy Mountains to the Yungas, back to Lima and Arica, crossed the Andes the third time, visited Ecuador, and made his way back to the valley of the Cauca. How many thousand miles of journeying this chronicle represents is a problem for laborious youth. And the botanist uses roads, railways, and horses only to get him from one scene of operations to another. He works afoot.
>
> It is good to know that Roezl had his reward. In 1883 he died, full of years and honors, in his native Bohemia. And the Kaiser himself was represented by a high dignitary at the unveiling of his statue in Prague.

Roezl is but one of many professional hunters who have sought these floral trophies far from the beaten paths of travel and beyond the confines of civilization. Their adventures, hairbreadth escapes, and romantic experiences would fill volumes. Many have lost their health, some their lives, in their precarious calling, but the orchid hunter will continue to exist as long as fanciers are willing to pay exorbitant prices for their favorite flower.

As heretofore stated, epiphytal orchids are found chiefly in the humid forests of tropical sections of the world and some of the most gorgeous in coloring and fantastic in shape are to be found in the Americas. To enumerate the species would require a book. Over 1,000 species are found in Brazil alone. It may not be amiss, however, to refer to a few of the principal genera and the countries where they

ORCHIDS IN SALVADOR.

Some of the finest specimens of the genus Cattleya have been found in the countries of Central America. In Salvador such species as *C. Skinneri* and *C. granulosa* are especially plentiful. The picture shows two native women of Salvador standing beneath a canopy of magnificent orchids.

are chiefly found. No common names have been given to the rarer and more valuable species and genera, so that the botanical nomenclature can not be avoided.

Cattleyas and laelias inhabit the damp forests of the various mountain ranges of tropical America from Mexico south through Columbia to Peru, the North Amazon Valley, through Venezuela and the Guianas, and the mountain belt of eastern and southern Brazil, usually at an altitude of 2,000 to 5,000 feet. Some Mexican species, such as *L. albida, L. anceps, L. autumnalis,* and *L. majalis,* are found to grow at 5,000 to 8,000 feet, commonly among polypodium fern.

Cattleyas and laelias grow on rocks and trees often devoid of other vegetation, along the margins of rivers and ravines, usually in the shade, where they receive a copious supply from heavy dews and condensation of morning fogs which saturate the forests during the dry season, and often from excessive rains while growing.

Stanhopeas are found from southern Mexico south to Peru, Venezuela, the Guianas, and Brazil, at rather low elevations, often in dense forests, the individual species having a very wide range.

Epidendrum is a large and varied genus, few of which are cultivated for any but botanical purposes, widely distributed throughout tropical America and in the United States from South Carolina southward. It is one of the few epiphytal genera inhabiting the United States. It is found at all elevations from sea level to 10,000 feet or more. Maxilarias cover about the same range, but are not quite so widely distributed.

Oncidiums are distributed along the mountain ranges from southern Mexico to Peru, along the coast in Brazil, and in the islands of the Caribbean Sea. The *O. carthaginense* and *O. papilio* grow at sea level and seldom above 500 feet elevation. Certain other species, like *O. cucullatum, O. Phalænopsis,* and *O. macranthum* are found at higher altitudes.

Odontoglossums thrive in the higher wooded mountain ranges of southern Mexico, Central America, the central Andes of Colombia, and south to Peru. They are also found in the higher regions of Venezuela. They usually grow in the moist shady forests where the rainy season is long continued or condensing fogs and dews are heavy, keeping many of the species in an almost perpetual state of saturation, their only relief from excessive moisture being due to the heavy winds that prevail in these regions.

Lycastes are distributed from southern Mexico to Peru along the mountain ranges, usually at an altitude of 4,000 feet in rather shaded locations; they are most common from southern Colombia to their northern limit. *Lycastes tetragona* is from southern Brazil and far removed from the general area of distribution, with little resemblance to any other species.

Courtesy of W. A. Manda (Inc.), South Orange, N. J.

A PROLIFIC ORCHID.

Cattleya labiata is one of the most popular and beautiful of the great Cattleya genus. The large flowers are usually bright purplish rose, with a yellow-throated, frilled, crimson-purple lip. There are very many varieties, however, and the species shows a great color variation. The white and nearly white varieties are the rarest and hence the most expensive. The plant shown in the photograph is a very valuable specimen bearing over 150 flowers, and is the property of an orchid fancier in New Jersey. Orchid culture is a fad for the rich, and there are some fine private collections owned by wealthy enthusiasts in New York, Philadelphia, and other cities of the United States. In South America the finest collection is said to be that of Mr. J. O. Hall, a wealthy business man of Buenos Aires, whose plants fill 12 orchid houses, embracing thousands of specimens and being particularly rich in American genera. The gardens are located at Villa Devoto, a suburb of the Argentine capital.

Courtesy of W. A. Manda (Inc.).

ONE OF THE ORCHID HOUSES OF A NEW JERSEY FANCIER.

Selenipediums are the South American representatives of cypripedium. They are distributed from Costa Rica south to Bolivia, and are also found in Venezuela, the Guianas, and Brazil, at from 3,000 to 8,000 feet elevation, in wet marshes and on the branches of trees in shaded forests, in all cases where they get a bountiful supply of water at all seasons.

Masdevallias, restrepias, and pleurothallis grow at high elevations in Venezuela, Mexico, and south to Peru, with some in the Organ Mountains in Brazil, but their principal center is in Colombia near the odontoglossum regions. They always follow the mountain ranges, growing on trees, rocks, and on wet, marshy slopes in extremely wet localities.

In point of numbers of species Brazil excels all other American countries in orchid production, while Colombia, Peru, and Mexico follow in the order named. No less than 1,059 different species have been collected from the forests of Brazil, which have become the favorite prospecting grounds for agents of the largest horticultural establishments in the world. The finest specimens are said to come from the Serra do Mar. The statement is made in "Twentieth Century Impressions of Brazil" that on one fazenda in the State of Espirito Santo, where ideal conditions for orchid production prevail, an expert recently estimated that the plants taken within a radius of 18 kilometers (about 11 miles) represented a value of more than $500,000, a figure in excess of what the coffee crop from the plantations of that area would bring. Thousands of plants have been sent to Europe from this section alone, and the rare varieties of *Albas* and various hybrids have brought exceedingly high prices. The indiscriminate collection of orchids by the natives for the purpose of exporting, together with destructive forest fires, is threatening the denudation of the natural homes of the Brazilian species. Another feature characteristic of the most valuable species, and one that has caused an enormous incidental waste of the country's wealth, is that they almost invariably grow on the most valuable trees, such as cedar, mahogany, rosewood, jequitiba, gurulin, etc. Since possession of the plant can usually be obtained only by cutting down the tree on which it grows, it may be seen that the collection of great quantities of orchids involves the destruction and waste of thousands of the most valuable trees to be found in the country. As a result, laws have been enacted which prohibit the gathering of orchids in certain forestal areas. The hope of orchid fanciers of the Brazilian species, however, rests in the vast and as yet unexplored regions of the Amazon Valley, which no doubt will prove a rich field for the discovery of new varieties as well as for the collection of species already known. Of the many highly prized species found in the country the most valuable belong to the Cattleya, Laelia, and Oncidium genera.

A VANILLA ORCHID IN MEXICO.

Of the more than 400 genera of orchids only one has a real utilitarian value. That is *Vanilla planifolia*, the orchid from which the vanilla bean of commerce is obtained. The genus is native to the warmer parts of Mexico and certain sections of Central America, but has been transplanted to other tropical countries, and plantations are now to be found in several of the West Indies and in the islands adjacent to the east coast of Africa and in the Indian Ocean generally, especially in Madagascar, Reunion, Mauritius, and the Seychelles. The Mexican product, however, still holds first place in quality and commands the highest price. The several species of the vanilla orchid are all climbing plants, their slender stems emitting aerial roots by means of which they climb upon the trunks and limbs of trees, as shown in the above picture.

Colombia, while less prolific than Brazil in numbers of species, produces between 600 and 700 different species of orchids, among which are some of the most beautiful known to the world. Especially noteworthy are the varieties of Odontoglossum. Of one of these Mr. Frederick Doyle writes:

> Speaking with due thought and sufficient knowledge, I declare that Odontoglossum Harryanum is the most finished result of Nature's efforts to produce a flower which should startle and impress by its colors alone, without eccentricity of shape or giant size or peculiarities of structure. Remembering that not all the world has seen this flower, I should give just a hint of the means employed. Fancy, then, 8 or 10 great blooms, dark chestnut in tone, barred with yellow, striped with mauve; the lip white, broadly edged with a network of bluish purple and intersected by a deep stain of that tint, beyond which is spread a sheet of snow; touch with gold here and there, and you have the "scheme of color."

It was this magnificent flower that was found in the neighborhood of Medellin. Orchid collectors have haunted the remote sections of Colombia for years and have reaped a rich harvest. Many of the natives depend upon orchid collecting for a living, and when an agent for some great horticultural importing house reaches one of their villages all other activities are for the time being suspended and men, women, and children scour the forests for plants. One remarkable feature of the orchid is that the plant may be withered and dried, packed in cases for weeks and even for months, and then resuscitated and with proper care be made to live and thrive in all its pristine beauty. It is this characteristic which has enabled horticulturists in Europe and the United States to collect and grow under suitable environment the most magnificent specimens found in the most remote regions of the world.

To enumerate the choice species and varieties found in Peru Ecuador, Bolivia, Mexico, and the countries of Central America is beyond the scope of this sketch. All of these countries have contributed rare and beautiful varieties and have added much to the delightful pleasures of lovers of this wonder-flower the world over. Perhaps no specialists among horticulturists are such enthusiasts in their pet hobby as are the orchidists. As illustrative of the feeling of an orchid fancier toward his favorite flower the following tribute may be quoted:

> Some years ago—in Italy perhaps—I saw the drawings made by Raffaelle for Leo X of furniture and decoration for his new palace; be it observed in parenthesis, that one who has not beheld the master's work in this utilitarian style of art has but a limited understanding of his supremacy. Among them were idealizations of flowers, beautiful and marvelous as fairyland, but compared with the glory divine that dwells in a plume of *Odontoglossum Alexandrae*—dull, artificial, earthy. Illustrations of my meaning are needless to experts, and to others words convey no idea. But on the table before me now stands a wreath of *Oncidium crispum* which I can not pass by. What colorist would dare to mingle those lustrous browns with pale gold, what master of form could shape the bold yet dainty waves and crisps and curls in its broad petals, what human

FLOWERS OF THE VANILLA BEAN ORCHID.

VANILLA BEANS GROWING ON PLANT.

Courtesy of Tea and Coffee Trade Journal.

TREE SUPPORTING A VANILLA BEAN PLANT.

The flowers of *Vanilla planifolia*, the orchid known as the vanilla plant, have thick, fleshy, dull-colored leaves that are inodorous and not particularly beautiful. The fruit consists of long, slender pods, shaped somewhat like a flattened lead pencil. These pods are gathered and dried before they are fully ripe, the drying process being the most important feature of their preparation, which develops their peculiar odor and gives them their value as a flavoring agent.

imagination could bend the graceful curve, arrange the clustering masses of its bloom? All beauty that the mind can hold is there—the quintessence of all charm and fancy. Were I acquainted with an atheist who, by possibility, had brain and feeling, I would set that spray before him and await reply. If Solomon in all his glory was not arrayed like a lily of the field, the angels of Heaven have no vesture more ethereal than the flower of the orchid.

From the foregoing it may be seen that it is to the remarkable beauty of coloring and of form, occasionally enhanced by a delicious fragrance, that orchids owe their preeminence in the floral world. There is but one of the many genera that has any strictly utilitarian value at present, and that is the genus *Vanilla*. Of this genus there are but few species, and of these the most important is *Vanilla planifolia*, from which most of the vanilla beans of commerce are derived. The genus is native in the warmer parts of Mexico and portions of Central America, but has been introduced and is extensively cultivated in some of the West Indies and in the islands of the East Indian Archipelago. Doubtless there are many who enjoy the delicious flavor of vanilla in their ices, cakes, and sweetmeats who are unaware of the fact that they are eating the essence of the fruit of an orchid. The several species of vanilla are all climbing plants, their slender stems emitting aerial roots by means of which they climb upon the trunks and limbs of trees. The flowers have thick, fleshy, dull-colored leaves and are inodorous. The fruit consists of long, slender pods, shaped like a thick lead pencil, smooth and firm. These pods are gathered and dried before they are fully ripe, the drying process being the most important feature of their preparation, which develops their peculiar odor and gives them their value as a flavoring agent.

Like those of other orchids, the flowers of vanilla depend upon insects for their fertilization. Transplanted plants flourished in the East Indies, but to the dismay of the importers failed to produce fruit. It was finally discovered that the cause of their infertility was to be attributed to the absence of the proper insects, and thereafter artificial processes of fertilization were successfully introduced and still obtain in the vanilla plantations.

There are also a few species of orchids that have tubers containing a form of nutritive starch, associated with a peculiar gum; these are collected and dried, and are known in commerce as salep, a drug extensively used in oriental countries as a nervine restorer and fattener, also prescribed in paralytic affections, but not used in American or European medical practice. This drug and the flavoring substance of vanilla are the only two products of this tremendous floral family which are put to practical use. From the standpoint of utility, therefore, the orchid may be considered as of little value; from an artistic and æsthetic viewpoint, however, it is universally accorded the first place in nature as "a thing of beauty and a joy forever."

AFTER THE WAR—EXPORTS OF MANUFACTURES

THE war ended, what will be the position of the United States as a competitor with Europe in supplying manufactures to the Latin American market?

How will the war have affected this country as an exporter of manufactures?

Necessarily to answer this question one must needs know when the war will end and more how the war will end. Yet, even now we may begin to assemble and collate certain underlying facts which throw much light on the subject. One might be tempted almost to say that enough is already known from which to draw conclusions which will be found not incorrect no matter when the war may end, and only in part incorrect in that one contingency of the complete conquest and subjugation of England, France, and Russia.

An export business in manufactures may be helped or hurt by good or bad transportation facilities, good or bad banking and credit conditions, by tariffs, colonization, association, sentiment, or by a dozen other facts or conditions. Yet these are not the bases upon which the trade is built. They are helps or hindrances and sometimes very important. They do not create an export business and they can not destroy it, although they may deflect it from one locality to another. We must reach down through all of these to find what is the real basis of an export business in manufactures. It is, in brief, efficiency in manufacturing. Efficiency is broadly based, for unless it be, it is not efficiency. Nations may be compared to individuals in their competition the one with the other. The smith whose arm is the more nervous, whose intelligence the higher, and whose skill and training the better, outclasses in personal endowment his less-favored neighbor. But personal endowment is not the whole basis of efficiency no matter how perseveringly and skillfully employed. There must be the tools, the material equipment, which is more important, for superior strength of arm and skill of brain will not win against better tools and a better equipped shop. Most important of all is cheap and abundant raw material and cheap and abundant mechanical power to work the same.

Efficiency results from skill, habits of industry, personal fitness, good and cheap food, good tools, organization, utilization of waste, cheap raw materials and power, and related causes and conditions. In turn each of these causes and conditions is itself based upon others, and all are interrelated and interlocked. Efficiency results from per-

sonal fitness acting upon good natural conditions with skilled and organized effort.

Before we can begin to assemble and collate our facts regarding the probable effect of the war on the position of the United States as an exporter of manufactures, we must see clearly what its position was before the war began. What was the manufacturing efficiency of the United States prior to August 1, 1914? Here at once we plunge into mists and clouds. Almost every guidepost when it is touched melts away from our grasp. Beliefs almost universal in their acceptance prove worthless if examined. Undoubtedly this country was a great exporter, the greatest in the world. It is unnecessary to clutter the train of thought with figures of statistics. It is enough that the United States exported in tonnage and in values more than Great Britain, France, or Germany. More, but of what? It is here that the guidepost fails. How did its net profits on these exports compare with the profits of Great Britain, for example, on its exports?

We must differentiate the country from the individual citizen. We must cease to think in trite maxims and half-true proverbs. Profit to the individual is not always profit to the nation. It is often quite the contrary. Industrially considered, within itself a country may be, and usually is, a congerie of only partly assimilated elements, yet to the outside world it is a unit. Its profits in trading with its fellow units broadly classified arise from two parallel lines of endeavor: First, capital investments abroad, including also all ocean-going shipping, whether under its own or a foreign flag, and the emigrants' tribute to the home land. The profit derived from these sources is direct and immediately becomes a part of the national wealth. However, the writer is not now considering such profits. Second, internal industry and exports arising therefrom. Every article of commercial export, a ton of coal or a piano, represents two things, and the one is always a national loss and the other a national gain. The raw material entering into the product, proportionately great or proportionately small, is a natural loss, but the value added to the raw material by skill and labor is a national gain. The country grows rich by exports in the proportion that values created by skill and labor outweigh values of raw material. Export of any quantity of raw material is pro tanto a depletion of capital resources. It is profitable to the country only when it represents a small, and the smaller the more profitable, proportion of the value of the exported product. A ton of coal on board ship represents but little added values over the raw product in the ground, but it represents great potentialities of energy to be utilized by some other country. A piano represents but insignificant value in raw material, but much value to skill and labor. It may be that for the individual to export coal, oil, wheat, cotton, lumber, or pig iron and

steel billets is as profitable as to export pianos, sewing machines, elaborated food products, furniture, pocketknives, stockings, and watch springs, but not so to the country. On the other hand, the import of raw material or even of some foodstuffs is an immediate and direct gain to the country as feeders to industry.

One may ask should exports of raw materials and foodstuffs be prohibited or discouraged? By no means. Certainly not. The export of such articles represents a stage in national development, and this is a necessary stage. It is the crawling before one walks. It is only necessary to understand that walking is better than crawling. It is also necessary to be able to recognize when a nation is in the crawling stage and when it has emerged therefrom. It is necessary to see that the best economic state is that in which the country utilizes all its raw materials in home manufactures and exports products of the highest grade of elaboration and at the same time furnishes a home market for all its food crops.

Prior to the European war, generally speaking, this country was still in the crawling stage, or to be more accurate it was beginning to toddle by clinging to the chair and the door knob. It had developed large manufacturing industries chiefly for the supplying of the home markets, but its exports were overwhelmingly raw materials and foodstuffs. It was in the intermediate state of progress. But some one will say "This can not be true. Our statisticians have classified all our exports and have shown that 45 per cent were manufactured, 20 per cent partly manufactured, and only 35 per cent raw materials." Perhaps these are not the exact percentages our statistically-fed friend will give, but that matters little. Every man can make his own percentages of proportionate manufactures and raw materials in exports, and one estimate is as good and as bad as another. It all depends on what one understands by manufactures. In a sense every article of trade is a manufacture and at the same time raw material. Flour is a manufactured article and so is pig iron, bar steel, lumber, and ginned cotton and so may be coal, wheat and logs in the rough. Classifying in rigid lines by "manufactures," "part manufactures," and "raw materials" or under any other like set of groupings that may be invented leads to nothing worth the while. The question is not how much "manufactures" and how much "raw materials" are exported, using these terms to express an arbitrary judgment as to what is one and what the other, and placing the whole export value of a particular article under the one or the other heading. In truth, every exported thing from iron ore up to watch springs represents a sale of both raw material and manufactures, the one a national loss and the other a national gain. What is the proportion? Of the exports as a whole is there greater gain or greater loss?

In its outpouring of agricultural products undoubtedly this country is denuding its lands and robbing them of their soil fertility. In every shipload of logs and lumber, of slightly wrought iron and copper one sees a loss of capital resources, a loss of opportunities and the material to strengthen a rival's hands. Is this kind of a trade worth while? As an ultimate, unquestionably no, but as leading up to something else, yes, but yes only so long as this something else is unattained.

This, then, was the industrial position of the United States at the beginning of the European war. It had developed its internal manufactures, on the whole, nearly to the standard of England, France, and Germany, but not quite, as its excessive export of raw material and foods proved. In natural resources, acquired equipment, and in skill and training it was as well or better placed than any other country. But it had not yet begun to do a high-class and remunerative business or at best only just made the beginnings. Internally it was efficient, externally it was inefficient. It was able to manufacture and did manufacture highly wrought and elaborate products, but it sent abroad raw cotton and low-class manufactures. The overwhelming bulk of its exports computed in values was raw material. Moreover it had not developed efficiency in the lines of salesmanship. It had not even the salesman's tools which are international banks, sales and credit organizations, knowledge of languages, of geography and of foreign development and needs. It had never felt the want of these things, because the selling of wheat, cotton, lumber, pig iron and the like called for no such.

But neither national trade or national progress moves along an unbroken and straight front. Viewed as a whole, the exports of the United States prior to August 1, 1914, consisted mainly of raw material values but in detail there were important exceptions and these exceptions were becoming rapidly more numerous and important. First, food exports were slacking in face of increased and better diversified production, a proof of growing national efficiency. Second, nearly all classes of manufactured products, but particularly the low class, were finished to a higher degree, i. e., more value in skill and labor, less in raw material. Third, fully wrought goods were exported in greater number and greater volume. A few industries, being developed to an international competitive plane, were bidding for and securing a world trade, and these industries were developing competent selling agencies. In brief the United States, not armed in every part, but well armed in some parts, was emerging from the chrysalis state. It possessed but few of the tools of foreign trade, international banks, direct exchange, sales and credit organizations, knowledge of languages and of geography. As compared with England or Germany it was lamentably deficient in all of these. Yet to-

much stress can be and has been laid upon these deficiencies. Like ocean transportation, they are incidental, and can not of themselves create a trade which is not otherwise economically based. Moreover they come and come rapidly to every trade which is economically based. The important thing is ability to produce in comparison with other countries. Make an article a little better or a little cheaper than others and in the end the trade will come, but it can never come so long as the price is higher or the quality lower.

Where is this world market in highly wrought goods for which this country must compete if it would move forward? It is everywhere, even in the competing countries, for such goods in the production of which this country can excel, but only to the extent that the tariffs of the former countries allow competition. For the greater part the market is in the nonmanufacturing sections of the world, the countries whose industries are, and in all probability will remain, agricultural, mining, stock raising, and forest. Of these sections of the world one of the most important is Latin America. Immediately preceding the war Latin America imported from the United States goods to a greater value than from any other country. The figures of imports for 1913 for the 20 countries combined were: From the United States, $330,915,267; from Great Britain, $322,757,575; from Germany, $218,827,871; from France, $109,954,670. Moreover, this was the highest class foreign trade that the United States possessed, the cream of its foreign exports, because it represented a greater proportion of value in skill and labor and a lower proportion in raw material than a like volume of exports elsewhere. Nevertheless it was of a lower class than the exports of England, Germany, and France to the same countries. As compared with United States exports in general, it was high grade; but compared with European exports, it was low grade. It represented too large a proportion of flour, coal oil, lumber, and the like, yet it did represent a very considerable trade in the highest class manufactures. The most striking fact about the trade was its unequal distribution over Latin America as to both volume and quality. In the near-by countries—Mexico, Central America, Cuba, the Dominican Republic, and Haiti—the United States was preeminent, 54.11 per cent to 12.33 for Great Britain, 9.92 for Germany, and 6.77 for France. Of equal importance was the fact that the United States trade was high grade even in comparison with the European. On the contrary, in South America the United States exports represented only 16.41 per cent to 27.98 for Great Britain, 18.51 for Germany, and 8.77 for France, and the grade of the trade from the United States was only a little above the general average of its export trade on the whole. Yet there was not a single country in South America to which the highest class goods were not sent, and

these goods pointed out in unmistakable terms the efficiency of the United States in manufacturing such, just as certainly as its inability to control Cuban and Mexican markets in other high-class goods pointed out its inefficiency in other lines.

It may not be overburdening the argument to produce a few figures to illustrate this idea. In 1913 the total imports of Argentina in percentages for the three leading countries was as follows: Great Britain 31.1, Germany 16.9, and United States 14.7. In the limited class of iron and steel goods the percentages were Great Britain 29.3, Germany 30.3, and United States 23.6. This shows a greater efficiency for the United States in iron and steel goods than in exports in general. A more striking illustration is in agricultural tools and implements, as follows: Great Britain 9.3, Germany 2.6, and United States 64.5. The imports from Canada were 50 per cent greater than from Germany, and from Australia 10 per cent greater than from Great Britain. But to return to iron and steel goods. The classification is too general to be worth much. We must particularize in order to show just where the United States was efficient. In the following list is shown the share of the United States as to the whole imports: Galvanized fence wire, more than 60 per cent; pumps, water, near 60 per cent; axes, 80 per cent; wrenches, 55 per cent; adding machines, 90 per cent; sewing machines, 60 per cent; writing machines, over 80 per cent; sheep-shearing machines, near 80 per cent; motors, unclassified, 55 per cent; revolvers, 75 per cent; hames, 85 per cent. These are a few of the leading examples; but in nearly all classes of highly wrought steel and iron goods the United States was rapidly capturing the trade in Argentina, notwithstanding the fact that it gained but little on Germany and not at all on Great Britain in the whole trade.

In 1913 the total imports of Cuba in percentages for the three leading countries were as follows: United States 52.8, Great Britain 11.2, and Germany 6.6.

For Mexico the percentages were: United States 49.8, Great Britain 13.2, and Germany 12.8. In both these countries in most classes of goods the United States preponderates. In Cuba, for example, many of the percentages run over 90. Iron and steel is over 80 per cent. On the other hand, in Cuban imports of cotton and manufactures thereof the United States supplies only a very little over 20 per cent, about one-half of what Great Britain supplies. Not only Great Britain and Germany, but France, Spain, and Italy, lead the United States in many cotton imports. In cotton laces the imports from the United States were only $45,450 out of a total of $595,600. In thread and yarn it supplied $31,470 out of a total of $430,000. In knitted tissues it supplied only 11 per cent, not much

more than one-half the Spanish imports and but little over one-fourth of French imports.

The most significant fact of the Cuban cotton import trade remains to be told. The United States has a 20 per cent tariff preferential over all other countries. Twenty per cent preferential in favor of any single European country, England, France, Germany, Austria, Italy, Spain, Belgium, or Holland would be more than sufficient to shut out all the others from the Cuban cotton market, yet in favor of the United States it does not even establish a respectably competing trade. Could any better proof be given of the woeful inefficiency of the United States in cotton manufacture?

The truth is that this country is inefficient in all the textile trades although less inefficient in silk than in wool, cotton, and other fibers.

For example, if we take Argentina, where there is no preferential to any country, where all stand on the same basis, the United States makes scarcely any show in textiles. For instance, cotton prints, total imports, 1913, over $4,000,000—United States share, $4,482. The whole cotton schedule shows imports of over $40,000,000, of which the share of the United States was about $570,000, and this latter is made up almost entirely of bags, bagging, and heavy canvas.

The wool schedule shows imports of about $16,500,000, of which the share of the United States was $15,697.

There is only one test for efficiency in manufacture, and that is the acid test of ability to compete with other countries under equal conditions, and this is shown by ability to sell in competing markets.

As briefly as he could the writer has tried to sketch the position of the United States at the beginning of the war in the matter of efficiency as compared with Europe in order to arrive at a base from which to calculate what its position will probably be in the years following the war.

Of the period of the war itself little need be said. No one can well mistake the position of the country during this period. Certain of its manufacturing industries have been stimulated to the highest degree. These of course are those supplying war requisites to the belligerent countries. Included under this heading may be considered all food exports to the same countries. Certain other industries have been stimulated by the demand of nonwarring countries for products heretofore supplied by the belligerent countries. Consequently, the proportionate export of all classes of manufactures by the United States to Latin America and other like situated sections shows a great increase. For example, the total imports of Argentina for 1915 compared with 1913 decreased 46 per cent. The imports from Great Britain decreased 48 per cent, from Germany 92 per cent, from France 65 per cent, and from the United States less than 9½

per cent. The percentages of the four countries of the total was as follows:

	1913.	1915.
Great Britain	31.1	29.9
Germany	16.9	2.5
France	9.0	5.9
United States	14.7	24.8

In brief, the United States is now exporting products it never before exported and to new localities. It has acquired a new trade, and the question is—Can it hold it? Provided the relative efficiencies of the United States and the competing countries of Europe remained the same after as before the war, the answer would be very simple. It would hold only that portion of the trade in which it had demonstrated efficiency. It would return to the bases prior to the war, and everything else would go into the scrap heap along with war munitions. But the war will change relative efficiencies, and this fact modifies the answer, but not in principle, only in application. The principle remains the same. It is always a matter of comparative efficiency.

What effect will the war have on European efficiency and what on American? On the whole, it will probably advance the European and retard the American. It will in all probability leave the United States less able to compete in high class manufactures and will push it a little further back on the industrial road of progress into being more clearly a purveyor of raw materials and foods. War is horrible, wasteful, and destructive. From the ethical or religious standpoint it is the complete negation of all good. But this should not blind us to the fact that from the industrial standpoint there are two sides to the ledger and furthermore that when ended it can be seen to have produced industrial changes in former neutral countries almost as great as those produced in the former belligerent countries. And there are two sides to this ledger as well. War is destructive of the material agencies of industry, the factories and the tools, but never to the extent some would have us believe. In northern France and in Belgium the majority of the industrial plants are intact and many are now operating. In other parts of France, in Germany, Austria, England, and Italy, and in the surrounding neutral countries, Switzerland, Spain, and Holland, all within the area industrially competing with the United States, there has been an increase in the material agencies of production. On the whole, Europe is better equipped in this particular than it was before the war. There is no reason at present to believe that this condition will be materially changed, no matter how or when the war ends.

War is destructive of human material. This, from the industrial standpoint, is the greatest loss of all. The dead are lost, and the maimed remain an industrial drag. On the other side of the ledger

there is but little to offset this except gain in bodily fitness and habits of discipline among the survivors not maimed or otherwise incapacitated. On the whole, the warring countries have already suffered in dead, maimed, and broken men, women, and children a great loss, and the end is not in sight.

War is destructive of capital, but by no means to the extent that many believe. Rather it produces a shifting of capital, and this more often than otherwise produces industrial efficiency. While it is undoubtedly true that the United States has gained by the influx of capital in the process of repurchasing its own industrial securities paid for in current exports, it is by no means true that industrial Europe has lost the capital wealth so shifted. It represented accumulations that heretofore Europe had not been able profitably to employ at home. As in the case of the rich factory owner, it was the capital invested in state and municipal bonds, and not the working capital invested in the factory. The former might be lost and yet the factory be none the less effective. As a matter of fact, not all the proceeds derived from the sale of American securities by Europe has been shot away at the cannon's mouth; much has been turned directly into productive enterprise, and as such will remain, after the war is ended, as an agency in industrial competition with the United States.

War expenditures are by no means all a clear loss. War often means ceasing to accumulate and, from the financial standpoint, but little more. It has been said that Great Britain is paying for this war with the profits of its current exports and the dividends and revenues it receives from foreign investments and transportation. This can not be far from the truth. National debts at the close of the war will not render Europe inefficient if for no other reason, because European Governments will in the future, as they have done in the past, adjust payments—i. e., taxes—to meet interest and amortization of these debts so as not to hamper productive manufacturing industries. The debts themselves will be very small compared with the capital wealth, and not large compared with the earning capacity of the countries. Much more probable is it that in the United States productive manufacturing industry will be subject to taxation and other restrictions burdensome to the point of producing inefficiency in foreign competition. Almost the entire political thought of the country moves in that direction.

Will any nation or group of nations emerge from this war so crushed through the destruction of its factories and other tools of production, through the loss of so many of its men, through the imposition of heretofore unheard of indemnities or trade restrictions, as to be no longer a rival of the United States in the field of manufacture? It is quite possible that any or all of these burdens may crush down one or more countries, but for the United States Europe is a whole, and it must

measure itself in competition with the whole. Crushing indemnities and trade restrictions imposed by arms do not very materially change the condition so far as concerns the outsider. At the most they shift the locality of the competitors.

Wars, even unsuccessful wars, in the past have not destroyed the industrial efficiency of countries, and there is less reason for thinking that this war will do so. France was crushed in 1870, forced to pay a thousand million of dollars indemnity and submit to the loss of a large area of its best industrial territory; yet France emerged from this disaster apparently more fit than before. Its over-seas trade advanced by leaps and bounds as it had never advanced before. Its position in the world as a competitor for foreign trade in manufactures almost may be said to date from its defeat by Germany. The Civil War did not crush the Southern States, the War of 1864 Denmark, or that of 1866 Austria. From a humanitarian or a religious standpoint, war is all that can be said against it, but from the industrial standpoint there are credit as well as debit entries to be made. It is a detergent and a stimulator of energy. It is a solidifier and an organizer. It teaches discipline and makes for teamwork. While no sane man can want these things at the bloody price of war, he can not refuse to look the facts squarely in the face.

Industrially Europe will come out of this war neither maimed nor bankrupt but as a trained athlete stripped for the running. The men needed in the factories will come from immigration and the idle will be put to work. Europe will be industrially organized. Each country within itself will work as a single man with a single purpose. Unsound industrial fancies and fads born in sluggishness and idleness will pass away and realities will come to the front. But what of the United States? Will it have learned a lesson or will it choose to remain hog-fat and out of condition? Will it continue to trust in political, industrial, and social nostrums, or will it strip itself and stand forth single, competent, and purposeful?

W. C. W.

THE PANAMA NATIONAL EXPOSITION

THE Panama National Exposition was formally opened with appropriate ceremonies on February 6, 1916, and is now complete and in full operation. The opening address by the President of the Republic of Panama, Don Belisario Porras, was the chief feature on the afternoon of the opening, the grounds having been thrown open free of charge to the large crowd in attendance. Parades of school children, of the various fire departments, and of the uniformed police added to the interest of the occasion, while official receptions, fireworks, and a general illumination made up the program for the night entertainments.

The exposition grounds are just north of the city of Panama, on the shore road to old Panama, the ancient ruins of the city made famous in the tales of the buccaneering days of the Spanish Main and which was finally sacked and destroyed by that doughty old pirate, Morgan. They rise in a gentle slope from the beach of the Bay of Panama. The "Gran Via," or central promenade of the exposition commands a fine view of the bay, of its little fortified islands, and of the vast expanse of the open Pacific beyond. To the right, as one looks out over the bay, is the city of Panama extending seaward to a point, while to the left, at but a little distance is the edge of a dense, primeval forest. Far beyond this forest, perhaps some 60 miles away, stands the celebrated "peak in Darien" from which Vasco Nuñez de Balboa first beheld the great ocean called by the Spaniards the "South Sea," little dreaming that 400 years later an exposition would commemorate the event especially in his honor.

The purposes for which the exposition was organized have been set out in full in the April, 1914, and June, 1915, numbers of the BULLETIN, so that this supplementary sketch is added merely to give a very brief description of what has been accomplished in the way of carrying out the designs of its projectors.

Arranged in squares about a large central plaza are the seven principal structures of the exposition. These are the Hall of Fine Arts, the Education, Commerce, Agricultural and Horticultural, and Administration Buildings, and the fine permanent edifices of Spain and of Cuba. After the close of the exposition the two last named are to serve as the permanent homes of the legations of these countries, and will also likely retain most of the articles now shown as permanent exhibits of the products of each of the countries. Of the buildings erected by the Government of Panama two are also

THE PANAMA NATIONAL EXPOSITION.

Top: Front entrance of Government Building. Center: School children on the exposition grounds on opening day. Bottom: The firemen's parade on opening day.

of permanent character, one being destined to serve as the permanent official residence of the Presidents of the Republic and the other to be transformed into a national museum.

The most important features of the exposition are the exhibits of the natural resources of the Republic of Panama. The management has succeeded in collecting a splendid variety of specimens showing the diversified fauna and flora of the country. As an instance may be mentioned the fact that among the many varieties and species of birds exhibited there are no less than 25 different species of pigeons and doves. Many specimens of large and small mammals and of rare species of fish are among the most interesting of the exhibits, while the forestal wealth of the country is demonstrated by samples of hundreds of varieties of fine timber and cabinet woods. Among them are samples of wood that is lighter than cork, while others are of timber that is heavier than water. The forests of Panama, containing many of the most valuable cabinet woods known, have as yet remained practically unexploited. Millions of acres of dense tropical forests have never been explored and await only the advent of men with sufficient capital to add their riches to the world.

To many of the Latin-American visitors the exhibition of the United States Government is perhaps the most interesting. The United States commissioner, Mr. William E. Tuttle, succeeded in his efforts to have the United States transfer its fine exhibit from the great Panama-Pacific Exposition at San Francisco, after its close, to the exposition at Panama. As a consequence, it is the best and most comprehensive exhibition the United States Government has ever sent to a foreign country. In it are included exhibits of every governmental department, among the most notable being those of the Army and Navy, the Public Roads Office, the Geological Survey, the Coast Guard, the Bureau of Standards, the Bureau of Lighthouses, the Panama Canal, the Bureau of Mines, the Bureau of Fisheries, and the Bureau of Education. In addition to these exhibits splendid motion pictures of the multifold activities of the United States Government are presented daily in the theater in the Hall of Commerce.

In accordance with the general custom of expositions, the management of the Panama Exposition has set apart certain days in honor of the various nations participating. The anniversary of Washington's Birthday, February 22, was designated as "United States Day," and upon this occasion was declared a national holiday, marking the formal opening of the United States exhibit. The occasion was celebrated most enthusiastically. Appropriate exercises were held and the day was celebrated by military maneuvers, drilling contests, various games, and athletic contests. Over 15,000 people were in attendance and attested their appreciation of the active participation of the United States in the exposition. The President of Panama

THE PANAMA NATIONAL EXPOSITION.

Top: Artistic fountain in the Grand Plaza of the exposition. Center: The Government Building at night. Bottom: The Spanish Building at the Panama National Exposition, which, after the close of the exposition, will be the home of the Spanish legation.

and other State and exposition officials were entertained at a luncheon by the United States commissioner, the day's festivities adding materially to the already cordial relations existing between the representatives and people of the two Republics.

Considering the disadvantages and handicaps under which Panama has labored to launch this exposition at a time when the financial depression resulting from the European war has prevented the full cooperation of other foreign Governments except those of Spain, Cuba, and the United States, the Government of the Republic and the management of the exposition are both to be congratulated upon their success. The exposition stands to-day as an example of the energy, courage, and independence of the Republic of Panama, and will accomplish much in the way of showing to the world something of the fine spirit of its people as well as of calling attention to the great natural resources of the country.

PROMINENT IN PAN AMERICAN AFFAIRS

THE death of Sr. Dr. Carlos Antonio Mendoza, one time President of Panama, caused great sorrow to his country, where he had been actively identified with public life for many years. Dr. Mendoza passed away on February 13, 1916, and no sooner had the sad news become known when prominent men throughout the land passed appropriate resolutions and published glowing tributes to his memory. Such was the esteem in which he was held that President Porras issued an official decree in which he fittingly commented on the public service and patriotism of the deceased, and expressed the profound grief of the country. By the provisions of this same decree the national flag flew at half-mast from all the public buildings for a period of three days, the body lay in state at the national palace, and the funeral rites were attended with every honor and ceremony that it is customary to accord to a chief executive. Dr. Mendoza devoted the mature years of his life to political activities. He took part in the movement for independence, and served as minister of justice in the early provisional government. His ability as a lawyer made him an influential factor in the constitutional and legal organization of Panama. Later on he was sent on a special mission by his country to Colombia. The service was unofficial in character, but it paved the way for a better understanding between the two nations. Dr. Mendoza served as minister of treasury and finance and also as vice president. In 1910, on the death of President Obaldia, he exercised the functions

of chief executive. At the time of his death he was a deputy of the National Assembly. He was favorably remembered in the United States by reason of his visit in 1913, when he was a guest at the legation of Panama in Washington. During his stay at the Capital and in New York he was the recipient of many attentions and courtesies.

In the death of Sr. don Prudencio Alfaro, the Republic of El Salvador lost one of its noted statesmen and lawyers. Dr. Alfaro had served his country on many occasions and at one time was vice president. He was born in 1861 in Guatemala, where his family, Salvadorians by nationality, were then living. At the age of 23 he received his legal degree from the University of San Salvador and immediately entered the political arena. The following year witnessed his election as deputy to Congress. During the following years he took more or less of an active part in public life, and with the election of Rafael A. Guttierez as President of the Republic, he was named secretary of state in the Department of Government. Soon after he was elevated to the vice presidency by popular election. Dr. Alfaro was at all times regarded as one of the first sons of Salvador, and even after his retirement from public life he continued to manifest an interest in all that pertained to the welfare of the country and the progress of its institutions.

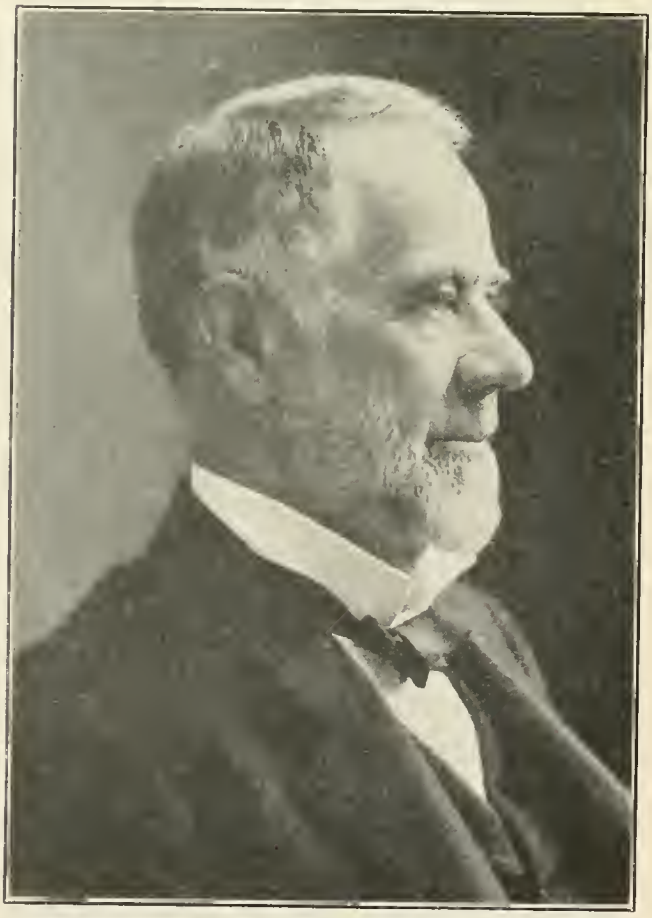
Sr. Dr. Joaquin D. Casasús, former Ambassador of Mexico to the United States, and one of the most prominent statesmen and economists of his country, died in New York on February 25, 1916. Sr. Casasús had come to the United States as a member of the Mexican delegation to the Second Pan American Scientific Congress and had not yet returned to his country when called by death. The former ambassador enjoyed a notable reputation as a man of letters as well as a student of economics and government. He was president for some years of the Mexican Central Bank and his writings on the currency question had much to do with the adoption of the gold standard in Mexico. Sr. Casasús was born in Tabasco, Mexico, December 22, 1858. He studied law in Yucatan and then in Mexico. After teaching for a little while in the Institute of Yucatan, he was appointed secretary of the government of his native state in 1882. The following year he returned to Mexico to accept the position of secretary of the Mortgage Bank (Banco Hipotecario), and then became consulting attorney of the department of finance. During this time he was also professor of political economy in the School of Engineers.

In the public life of Mexico he was a deputy from Tabasco and took an active part in reorganizing the various branches of legislature; he served as chairman of the commission appointed to draw up a commercial code; was director of the School of Commerce and Administration; professor of political economy in the law school; and later was senator from the state of Vera Cruz. He represented his country

SR. DR. CARLOS ANTONIO MENDOZA.

SEÑOR DR. PRUDENCIO ALFARO.

SEÑOR DR. JOAQUÍN D. CASASÚS.



HENRY GASSAWAY DAVIS.

in the United States as Ambassador in 1905, and in 1911 as ambassador on special mission; he was Mexico's delegate to the monetary conference at Brussels and was secretary general of the Second Pan American Conference held in Mexico.

Among his literary works is a translation of Longfellow's Evangeline, and many studies from the classics, as odes of Horace and Catulus, Virgil's Bucolicas, the Elegies of Tibulus, and others. His works on history and economics include Studies on Banks, History of the Foreign Debt Contracted in London, translation of Hosevard's History of Mexico, Notes on Mortgage Banks, Credit Institutions and the Question of Silver, discussions of monetary problems, depreciation of currency, and international currency. His scholarly attainments won for him the office of President of the Mexican Academy, of the Society of Geography and Statistics, and of the Altamira Lyceum. He was also a member of the American Society of International Law, the Academy of Political and Social Science, the Association of Economics of Paris, the Hague Tribunal, and other literary and scientific organizations. He held the honorary degree of doctor from the University of Mexico.

The demise of Henry Gassaway Davis, former United States Senator from West Virginia, and representative from his country to two Pan American conferences, brought to a close a long life of public service and achievement. The venerable Senator died after a brief illness in Washington, D. C., at the age of 93 years. Throughout his life he was an interesting figure in public affairs, and participated in many of the great political events of the Nation for more than three-quarters of a century. It is significant that he was born in the same year, 1823, that the Monroe doctrine was enunciated, since during his long years of public activity he was an ardent advocate of stronger Pan American ties. At the First Pan American Conference in Washington, 1889–1890, and again at the second conference in Mexico, in 1901–1902, his personality and his speeches figured largely in the splendid efforts of the United States delegation to strengthen the bonds of friendship between North and South America. Mr. Davis was born in Baltimore, November 16, 1823, and received but a meager education in the public schools. At an early age he commenced work, and through his energy and perseverance became one of the great coal mine owners. He was a prominent factor in the building and success of the West Virginia Central & Pittsburgh Railway, and he also built the Coal & Coke Railway, of West Virginia. Mr. Davis was a member of the State Senate of West Virginia from 1868–1871, and in the latter year came to the United States Senate, where he served two terms. In 1904 he was the Democratic candidate for Vice President. As a railroad builder the Senator had dreams of a Pan American railway which would link by rail the entire Western Hemisphere, and he was chairman of the Permanent

SEÑOR DON ELISEO GIBERGA.

SEÑOR DON JUAN C. BLANCO SIENRA,

Envoy Extraordinary and Minister Plenipotentiary of Uruguay to Peru and to Ecuador.

SENHOR LUIS DE SOUZA DANTAS,

Envoy Extraordinary and Minister Plenipotentiary of Brazil to the Argentine Republic.

DR. EDWARD EWING PRATT,

Chief of Bureau of Foreign and Domestic Commerce United States Department of Commerce.

Pan American Railway Committee provided for by the Second Pan American Conference. His ideas of such a railroad were fast being realized when he was called to his final rest.

Sr. Dr. Eliseo Giberga, known throughout the island of Cuba as an able lawyer, a talented poet, and a public speaker of rare ability, died in his native city of Matanzas, late in February, at the age of 64. His sudden demise was everywhere received with much sorrow, for although Dr. Giberga held no public office and took no active interest in political life, he was none the less a prominent public figure. As a lawyer he was respected by his fellow members of the bar for his ability and learning. Men of letters praised his poems, and his contributions to that muse take a high place in Cuban literature. But it is as a polished and powerful orator that his reputation had spread throughout that land. Although he was born in Matanzas and passed away there, his remains were brought to the capital for interment, and his funeral was one of the largest ever held. At the time of his death he had gone to Matanzas to deliver a patriotic oration at the Liceo of that city. The doctor was a delegate to the Cuban constitutional convention, represented his country on special mission to the centennial celebrations of the Cortes of Cadiz, and for many years has been closely identified with Cuban history.

Sr. Don Juan C. Blanco Sienra, the envoy extraordinary and minister plenipotentiary of Uruguay to Peru and to Ecuador, is conducting his diplomatic mission in a manner that is winning him much favor among the people to whom he is accredited. Minister Sienra was appointed to his present post in August, 1912, after a public service extending over 35 years, interrupted only once for a period of six years when he withdrew to private life on the farm. Sr. Sienra was born in Montevideo in 1859, and when a young man of 18 became connected with the Government. In 1889, following this interval on the farm, he reentered the Government service, associating himself with the National Department of Cattle Industry, where his practical experience made him a most valuable member of the staff. In this division he rose through the various grades, finally attaining the office of director general. From this position he was called into the diplomatic service of Uruguay. Sr. Sienra has served on a number of important committees and commissions in the course of his official duties, and under his administration many practical improvements have been introduced into the cattle industry of the country. Minister Sienra has also served as judge of the criminal courts of Montevideo. In his dual capacity as minister to both Peru and to Ecuador he is exercising his good offices to promote more cordial relations not only with Uruguay, but between these two Republics of the west coast as well.

It is with a sense of pleasure that the Bulletin includes under this column the portrait and commentaries on Snhr. Luis de Souza Dantas, envoy extraordinary and minister plenipotentiary of Brazil to the Argentine Republic. The influence toward a stronger spirit

of Pan Americanism which the diplomats of the American nations accredited to sister Republics on the Western Hemisphere exert is a strong one, and aids materially in the work of promoting better understanding and fostering closer ties of friendship. Minister Souza Dantas is one of the younger diplomats at the Argentine capital. Cultured and of engaging personality, he has succeeded in winning the esteem and cordial regard of both the official and private society of Buenos Aires. Especially noteworthy were his services in arranging for the memorable visit to Argentina of Dr. Lauro S. Müller, the minister of foreign affairs of Brazil, when the latter visited the capitals of Argentina and Chile.

Under the able directorship of Hon. Edward Ewing Pratt, the present Chief of the Bureau of Foreign and Domestic Commerce, there has been a remarkable growth of interest and activity in the matter of United States foreign-trade expansion. Dr. Pratt is perhaps one of the youngest officials occupying such a responsible position, but through his educational training and equipment he has brought to the post a vast fund of practical knowledge and experience.

Dr. Pratt graduated from Oberlin College in 1906 with the degree of A. B., and the following year received his M. A. from Tulane University. In 1911 Columbia University awarded him the doctorate degree. At the New York School of Philanthrophy, where he pursued studies, he later held the position of Assistant Professor of Economics and Statistics. In 1912 he acted as Chief Statistician to the New York State Food Investigating Commission. He was also special lecturer at New York University in the School of Commerce, Accounts, and Finance, where he gave courses in business management and statistics and research. He organized and directed several traveling parties to Europe for the purpose of studying economic, industrial, and municipal problems. Among these groups were many prominent citizens of this country and leaders in their respective communities. Dr. Pratt was also in charge of the industrial work of the Merchants' Association of New York, and in connection with this work he made an industrial survey of that city. He is regarded as an authority on matters pertaining to industrial betterment and welfare work as carried on by employers as well as on questions of domestic and foreign commerce.

Dr. Pratt is a member of the American Economic Association, the American Statistical Association, the National Conference on City Planning, the National Association of Corporation Schools, and has published a very careful statistical study on the industrial causes of congestion of population in New York City, as well as numerous other articles on kindred subjects. Since his association with the Department of Commerce, he has traveled extensively through the United States discussing foreign-trade expansion with representative commercial organizations and has contributed numerous articles on various phases of this subject to leading papers and periodicals.

PAN AMERICA IN THE MAGAZINES

The Geographical Results of the Peru-Bolivia Boundary Commission is the title of a paper read before the Royal Geographical Society of England on December 13, 1915, by Col. Sir Thomas H. Holdich, K. C. M. G., K. C. I. E., etc., who is also one of the vice presidents of the Society. The paper was published in full in the February, 1916, number of The Geographical Journal (London). Only brief excerpts, covering the main features of the work, are herewith reproduced.

In order to estimate properly what the boundary demarcators were called on to face it is as well to remind you not only of the nature of the territories they had to work over, but of the nature of the boundary they had to fix. There was first of all the backbone of the Cordillera (i. e., the Sierra) to be dealt with. The highlands of the Andes to the north of Lake Titicaca (where the boundary demarcation was to commence), as they slope gradually upward to the continental water parting between the Pacific and Atlantic, spread into valleys of considerable width, at the heads of which are the sources of affluents and contributaries to the great central lake. These upland flats are traversable by mules and llamas, their formation being akin to that of the pampas on the coast territory. As they reach upwards they become inexpressibly desolate, devoid of vegetation, wind-swept and frost-bound, almost trackless, and subject to great vicissitudes of heat and cold. And yet the altitude is not extreme, although they lead up to the culminating divide of the Cordillera. There is a depression in the line of extreme altitudes, and a fall to about 17,000 feet at the head of the Suches tributary to Lake Titicaca, which gives opportunity for a pass into the Sina affluent of the Amazon system. Lake Suches, at the head of the Suches River, nestles closely under the culminating watershed, and it was a useful feature in the program of the boundary demarcation, as also was the little station of Poto, where the telegraph was utilized for the determination of longitude. The demarcation of the line between Peru and Bolivia begins (so far as this story is concerned) about this point.

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Col. Woodroffe was appointed chief commissioner for the Peru-Bolivian Commission, with Captain Toppin, Lieut. Nanson, and Lieut. Moores as his assistants; the Commission left England in January, 1911, for Lima, which was reached on February 1. Two Peruvian naval officers, Commandante Olivera and Teniente Salavery, with Dr. Aurrey, also a Peruvian, joined the Commission at Lima.

It was not until April 12 that they were ready to make a start in the field. At Arequipa, an uplifted town 7,000 feet above the sea, guarded by Misti, the sacred mountain of the Incas, it was necessary to take advantage of the telegraph system in order to fix a longitude at an advanced base in the Andes from which to extend triangulation and systematic surveys. As the boundary work of the Commission was to commence from Mount Palomani near Lake Suches at the head of the river of that name, and from that point was to be carried both northward and (according to later instruction) southward, the base point selected was at Poto, a hamlet 290 miles by road and rail from Arequipa, and 20 miles from the boundary beyond the Andine divide, this being the farthest telegraph station available. It was here that the first

MOUNT PALOMANI NEAR LAKE SUCHES.

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TRIGONOMETRIC STATION No. 12, NEAR SUCHES.

"He found little else than vast and comparatively level expanses of desolate snow waste, seamed across with snow-patched ridges fringed here and there with a tumbled sea of natural wreckage, stretching away in endless steppes to that depression in the line of the great divide, which indicated the position of the passes at the head of the Suches into Bolivia."

base was measured. * * * The longitude of Poto as determined by interchange of time signals from Arequipa (itself a well-fixed position with an observatory), became the initial point of reference for all subsequent determinations of the Peruvian Commission. From Arequipa signals were also exchanged with the chief of the Bolivian Commission, Colonel Fawcett, at Juliaca, on the line of railway which is carried from Lake Titicaca to Cuzco, at its junction with the coast line from Arequipa. Colonel Fawcett proposed to carry his triangulation from this point in Peruvian territory to the boundary, presumably because there was no possible position on the Bolivian side which would answer his purpose equally well. Thus Arequipa became the origin of longitudes for both Commissions.

When Woodroffe, with Olivera and Moores, left Arequipa on May 31 to join the advance party at Poto, Toppin was already at work at the measurement of the Poto base, and had completed some of the extension from that base by the time Woodroffe arrived. The arrival was delayed by the necessity of a visit to the Prefect of Puno in order to complete arrangements for transport, guides, and correspondence. On June 2 the official meeting between the two Commissions took place at Juliaca, and the work of demarcation was declared to have begun. The Bolivian Commission had been placed under the command of Dr. Romero, of La Paz; but it was Fawcett who carried the work of the Commission forward from Juliaca in order to fix points on the survey range forming the boundary.

At Suches, right under the great divide, Woodroffe and Fawcett met on June 20 and discussed the problems of demarcation. Meanwhile Woodroffe had visited Poto, inspected Toppin's excellent base, and with him had carried triangulation to Lake Suches. Here unexpected orders were received to carry the triangulation down the basin of the Suches to a point about half way to Lake Titicaca. Both Commission parties worked over this part of the line, but apparently on different principles. Fawcett made a rapid survey, which was probably not more than a reconnaissance, whilst Woodroffe continued the same painstaking and accurate system of triangulation carried out from Poto, involving the erection of signals. * * *

It was on May 11, 1911, with the preliminary reconnaissance completed, that Toppin left Tirapata on the Cuzco railway line for Poto, where, after determining a differential longitude with Arequipa, he measured the first base within sight of the boundary line which followed the ridges and peaks of the main Andine divide. Poto is nothing but a little outpost hamlet tilted up at 14,000 feet of elevation almost under the crest of the divide. It is within the basin of the Titicaca depression, although its position is remote. The main divide here follows a course north of Titicaca, which is roughly parallel to the outline of the lake at from 50 to 60 miles distant until as far as the head of the Suches River. Then it apparently turns suddenly south inclosing that river within narrow bounds until it almost touches the lake at its southeastern corner above Sorata. Here it merges into the Cordillera Real. In order to reach Poto from Tirapata the road traverses an intervening minor range by a pass 17,000 feet above the sea, where at a distance of 20 miles the party faced the magnificent snow-clad ranks forming the main divide, hitherto invisible. It was bitterly cold and Toppin here notes the fact that at these high altitudes rain never falls. If there is wind the precipitation is hail. If there is no wind it is snow. It was under such conditions, with intervals of blinding blizzards, intense frost (which, however, was luckily fatal to the pest of insect life) and no fuel except llama droppings, that Toppin and his companion Nanson determined their longitude and prepared the base. Here Col. Woodroffe joined them on June 9, and whilst Nanson and Moores took up the planing table, Toppin turned again to triangulation with Woodroffe and carried it successfully to Lake Suches.

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Ten weeks after the commencement of operations the work above the snow line came to an end. The great divide was crossed by the Sina Pass at the head of the Suches

GEOGRAPHICAL RESULTS OF THE PERU-BOLIVIA BOUNDARY COMMISSION.

Left: Road from Tambopata to Sandia. Right: A typical temporary boundary mark erected by the commission.

and the search commenced for the source of the Heath River. There are but two passes over the divide—the Sina in Peruvian territory and the Pelechuco in Bolivian. Beyond the passes to the north was a tumbled sea of precipitous, grass-covered crags and precipices, and yet farther north, at an elevation of 11,000 feet, were unbroken forests extending right across the Amazon basin to Brazil, ever sloping gradually downward till they nearly touched sea level.

The descent on the northern side of the divide has been described in vivid terms by both Woodroffe (who crossed on July 29) and Toppin. Some of the worst of the Himalayan passes beyond Gilgit seem to have a family resemblance to that trail. It was a nerve-shaking experience; yet the mules got down all right and there was no disaster. Here amongst the wild confusion of the broken and scarred spurs of the northern flank of the Cordillera great difficulty was experienced in carrying out continuous surveys, and the record of the commission is a tale of strenuous effort to reach commanding peaks and to connect up with previously fixed points. The great obstacle was the mist and the weather. No matter how early was the start, or how strenuous the desperate endeavor to reach the point of observation ahead of the mist, it was seldom possible to outpace it. Slowly from the deep depressions of the hills the single cloudlets gathered, and as they rolled and massed together they moved in battalions till they spread in an almost level and solid sea which lapped around the higher peaks and gradually spread with a rising tide till every point was obliterated. It was a grand and most moving spectacle, but most annoying. Here again there is a close similarity in meteorological conditions of this nature between the Andes and the Himalayas.

On August 25 Moores and Olivera were dispatched as a subcommission to study the geographical conditions of the rivers of the plains to the north and to fix latitudes by observation and longitudes chronometrically. The prominent objectives of this expedition were the sources of the Heath, the geographical position of Llampu (an important point on a boundary where no prominent features, either natural or artificial, existed), and the course of the Manuripe River. The results are embodied in an interesting report by Lieut. Moores, which forms an appendix to the official report of the commission. * * *

Toppin and Nanson left for the Lanza River; Woodroffe continued his struggle through the deep and dense Montana forests to continue triangulation. Here the necessity for trail cutting greatly hampered his movements, but he was fortunately able finally to connect his work north of the Sierra by interpolation with certain peaks of the Cordillera already fixed on the boundary, and thus maintain the continuity of his surveys. On October 25 the commission moved south again by the Sandia route to the railway, where further strengthening was secured for the technical work, and finally reassembled at Arequipa on November 9, Olivera and Moores rejoining from the Manuripe expedition on the 30th.

Meanwhile the Bolivian Government had again appointed a fresh commission composed entirely of Bolivians, Fawcett having left their service, and this party met Woodroffe at the conclusion of the season's work at Lima, where nearly all points in dispute appear to have been satisfactorily settled. This practically closed the work of the 1911 season.

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The Peruvian Commission for 1912 included the three British officers and Teniente Salavery, with Dr. Gomez de la Torre attached as medical officer. A subcommission was formed for the practical work of demarcating the boundary so far fixed. The work of the season may be shortly summarized as the continuation of triangulation and topography from the main divide of the Sierra and the sources of the Heath; the exploration of the Tambopata and of the Heath rivers in order to effect a junction with Fawcett's survey of that river; the clearing of tracks through the Montana forests of the foothills and plains for the purpose of defining the boundary; the erection of boundary marks on all rivers crossed, and the identification of the final point on the Acre River

in agreement with that already fixed by the Bolivian Commission. This position was eventually determined, and it may be said that the agreement generally between the Peruvian and the Bolivian surveys was satisfactorily established. Seldom, indeed, has an international boundary been settled with so little of the friction of local disagreement as this one. The Royal Geographical Society, which was appointed arbiter in case of dispute, has never once been asked to exercise its official functions. * * *

The following year, 1913, saw the completion of the demarcation. The romance of the work in the Sierra was behind the commission. Nothing now remained but to effect an official agreement with the Bolivian Commission as to that part of the boundary already completed and to finish the forest work and the line clearing. The Peruvian Commission was still under the direction of Capt. Toppin, whose tactfulness in official discussion rendered a satisfactory agreement with the Bolivian representatives a comparative certainty.

At the conference between the two commissions, Fawcett's survey of the Heath River made in 1909 was accepted on both sides, but not his source of that river. The question of a river's source, it may be noted, is always a delicate one in political geography. It had been found that the relations between the Manuripe River and the boundary had not been accurately stated in the provisional definition, and there were other minor geographical questions still to be decided by investigation.

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With the close of the commission's work Capt. Toppin has much to say in retrospect and certain sound suggestions to make as to the maintenance of the boundary in future. It will undoubtedly be a difficult and expensive boundary to maintain, even should the original boundary marks be replaced by permanent constructions, which might very usefully be of the same character as those adopted for the Chile-Argentine boundary in the Patagonian swamps and forests. These are of light iron construction and warranted to withstand all vicisitudes of climate and insects.

Bahia Blanca, an Argentine Seaport Made to Order, is the title of an article by Mr. M. Drew Carrel, commercial representative of the National City Bank of New York in Buenos Aires, which appeared in the February number of The Americas (New York). Mr. Carrel describes the location and natural advantages of Bahia Blanca as a seaport, and tells something of its remarkable growth and its future prospects as a great shipping center. Some of the interesting and most important facts brought out in the article are reproduced in the following excerpts:

After Buenos Aires, the capital, and Mar del Plata, the fashionable seaside resort of Argentina, Bahia Blanca is probably one of the most talked of places in the Republic. It is the southernmost city and seaport of importance on the side of the Atlantic. Its distance from the equator is about the same as that of Baltimore, St. Louis, and San Francisco, and the temperature is very like theirs. It is about 250 miles by rail southwest of Buenos Aires city, on the southern boundary of the Province of Buenos Aires. The principal train via the Southern Railway leaves Buenos Aires at 6.30 in the evening, with first-class sleeping cars and dining-car service, and arrives at Bahia Blanca the next morning shortly after 9 o'clock.

The population of Bahia Blanca is about 70,000, and in that measure there are several other cities in Argentina of equal or more importance, although during the past 15 years the number of inhabitants has increased nearly 300 per cent, a record that few of the others have attained. * * *

The Argentine Republic, as every student of commercial geography knows, furnishes a very important part of the world's supply of wheat, corn, oats, flaxseed,

Courtesy of The Americas.

PORT FACILITIES OF BAHIA BLANCA, ARGENTINA.

Perhaps the most important features of Bahia Blanca are its fine port facilities. The Southern Railway, the Pacific Railway, and the Rosario-Puerto Belgrano Railway companies have built their lines to Bahia Blanca, connecting it with all parts of Argentina, and have spent millions of dollars in docks and elevators for loading grains and in dredging the channels for ocean-going vessels at the ports of Engineer White, Galvan, and Belgrano. Among the Argentine ports Bahia Blanca is a strong competitor with La Plata for third place.

Courtesy of The Americas.

GREAT WHEAT ELEVATORS AT BAHIA BLANCA, ARGENTINA.

More wheat and oats are shipped through the port of Bahia Blanca than through any of the other ports of the Argentine Republic. From January 1, 1915, to September of the same year its shipments of wheat amounted to 914,263 tons, and of oats to 112,195 tons. Next to Buenos Aires, Bahia Blanca is also the largest wool market of the country, about 30 per cent of the entire clip being shipped from there annually.

meats, and hides. Argentina has but one coast line, and there are only a few available points of embarkation for all of the vast quantities of foodstuffs, most of which are exported during certain months of the year. They are Buenos Aires, Rosario, Santa Fe, and other smaller ports on the Plata River, and La Plata and Bahia Blanca on the Atlantic coast. For 350 miles southward from Buenos Aires, Bahia Blanca is the only port with a large natural harbor. And then south of Bahia Blanca there is no other break in the coast line until Puerto San Antonio, in the Gulf of San Matias, is reached. Back of Bahia Blanca to the south and west are the limitless expanses of the Pampa and Rio Negro, and just to the north is the southern district of the Province of Buenos Aires. Its hinterlands are not as intensively cultivated, nor as favored with rainfall, nor as thickly populated as the northern part of the Province of Buenos Aires, or some parts of Cordoba, Entre Rios, and Santa Fe Provinces, nor as Tucuman Province. But upon these vast areas are produced immense quantities of grain and are raised hundreds of thousands of sheep. More wheat and oats are shipped through the port of Bahia Blanca than through any of the other Argentine ports, and a very large proportion of the Argentine wool comes out of the country back of it. Rosario and Buenos Aires handle the most corn and flaxseed, and La Plata and Buenos Aires the most meat and hides.

Despite the elaborate equipment that has been installed in the various Argentine ports for handling products for export, the volume is so great during certain periods of the year that they are then taxed to the utmost to prevent serious congestion along the railway lines and at the docks. * * * During the harvest season millions of bags of cereals can be seen piled up on the ground, protected only by tarpaulins, at the loading points for hundreds of miles along the railways. Then there is a rush to get this perishable freight moving to the seaports, where it can be loaded into the holds of the vessels that carry it to other countries before it is damaged by rain. The producer, the shipper, the railways, and the exporter each is anxious to get it off his hands and pass it on to the next man before it is spoiled. The situation is so serious at times that a railway was built direct from Rosario in Santa Fe to Bahia Blanca to relieve the ports on the River Plata. The Southern Railway, the Pacific Railway, and the Rosario-Puerto Belgrano Railway companies have built their lines to Bahia Blanca, connecting it with all parts of Argentina, and have spent millions of dollars in docks and elevators for loading grains, and in dredging the channels for ocean-going vessels at the ports of Engineer White, Galvan, and Belgrano, because another exit to the Atlantic at Bahia Blanca was necessary to aid in expediting this movement.

And the gradual development of the hinterland, more railways into it already projected and being built, more settlers, more intensive cultivation, and more modern systems of grain storage elevators, will mean more cargoes to be located at Bahia Blanca, more agricultural machinery, implements and supplies to be exchanged at Bahia Blanca for the money the producers get for their harvests, and more and better facilities for the banks to finance the moving crops. * * *

. The city of Bahia Blanca of to-day looks new. It did not begin to grow until about ten years ago. Its streets are wide and well paved, and there are so few trees that one might get the idea that there had not been time for them to grow. Most of the buildings, like those in other cities of the Republic, are built of brick faced with plaster, or of a reinforced concrete, and one story in height. There is a modern system of electric street railways. There is an electric lighting and power plant, and telephone service. The water supply is good. It is piped down from the Sierra de le Ventana, some 50 miles to the north, and is stored in reservoirs with a capacity of something like 550,000 gallons. The city government has laid out the municipality with a view to future development. There is a large park that is not yet completed, and space for many more streets and wide boulevards. It has constructed a municipal theater and a municipal administration building, both of which would be a credit to any city, and which set a high standard for the public edifices to be erected in the future.

Mr. Carrel shows the importance of Bahia Blanca as a trading center by giving a comparative table of the imports and exports of the five leading ports of Argentina for 1912, 1913, and 1914, and also gives some interesting statistics as to the grain and wool exports. Mention is also made of the leading industrial establishments, and general business conditions are described. He concludes with the following description of the excellent port works:

The bay is wide at its mouth. It is formed by a river that empties into the sea at that point. It contracts into a channel some 1,600 feet wide opposite the city and Port Galvan, with a mean depth of about 38 feet at high water. It is a natural tidal estuary, spacious and ample for the navigation of ocean-going vessels to its extreme limit, affording safe protection from gales. The approach is safe and easy and therefore the towage fees to different points in the port are low.

There are four principal port features; namely, Puerto Militar, constructed by the national government near the entrance to the bay, as a military and naval station; Port Belgrano, developed by the Rosario-Puerto Belgrano Railway Co. near the former terminal of their railway; Port Engineer White, installed by the Southern Railway farther in; and Port Galvan built by the Pacific Railway Co. near the head of the bay and about 5 miles from the city.

At Port Militar the Government has built extensive docks, machine shops, slips and dry-docks for handling the largest of battleships, has dredged commodious anchorage basins and approaches, and constructed ample warehouses for the storage of military and naval supplies, and the development will include facilities for handling general cargo from the railways.

Port Engineer White, the terminal of the Southern Railway, has a large dock for the handling of general cargo. Some 12,000 tons of steel and iron were used in its construction. It is equipped with the latest electric and automatically operating freight handling machinery and devices, and has a dock shed covering some 6,000 square meters of space. There is a large anchorage basin. There are two modern fireproof elevators for receiving and loading cereals. They are capable of handling 1,500 tons of wheat per hour. The docks and elevators are served by extensive freight yards with something like 80,000 meters of side tracks, with numerous freight depots and warehouses.

The Pacific Railway Co.'s installations at Port Galvan also include modern docks for loading and unloading general cargo, elevators for handling grain, special facilities for loading cattle, and large warehouses where merchandise can be stored in bond. There is a flour mill with equipment for loading direct into steamers. There are large tanks for storing fuel oil. Wherever possible the machinery used on the docks and elsewhere is operated by electricity, and is of the latest type. There are many miles of side tracks in the freight yards, which connect with the principal railways to all parts of the Republic. There are warehouses for baled alfalfa and storage accommodations designed for receiving wine from the Province of Mendoza, when the Pacific Railway shall have completed its direct line from that province to Bahia Blanca.

The visitor to Bahia Blanca who takes the trouble to go to the port works is certain to be impressed with the idea that the elaborate preparations that have been made, the docks, elevators, warehouses, freight yards, representing many millions of dollars spent by the Government, railways, and commercial concerns, are beyond the present requirements of the port, and therefore stand for a material evidence of their faith in its certain and rapid development into a very important city.

Masterpieces of Aboriginal Art, the general title under which Art and Archæology (Washington, D. C.) has been publishing the very

interesting series of articles by Dr. W. H. Holmes, of the Smithsonian Institution, deals in its fourth installment, in the February number, with the work of the American aborigines in sculpture in the round. Dr. Holmes takes occasion to explain the use of the term "masterpieces" in this connection, writing as follows:

In speaking of masterpieces of art we usually think of the highest products of genius among civilized nations, but we are at liberty to think of the best works of any people, whatsoever the culture status, as the masterpieces of that people. Extending our vision thus into the field of prehistory we may think of the highest work of long-vanished races as the masterpieces of the particular time, place, and people, thus opening up a vast perspective of masterpieces, beginning in the foreground with the highest achievement of the master sculptors of the modern world and extending backward to the very inception of culture. At the vanishing point we find the earliest masterpiece in the first stone from which a chip was designedly removed by the hand of man. This chipped stone was, however, for the man of that day an achievement quite as remarkable as the greatest product of the sculptor's chisel of the present period.

In referring to certain of the sculptural works of the American aborigines as masterpieces, we do not imply comparison with the masterpieces of the Old World. They are the work of a people still well within the shadow of the stone age, yet a close examination makes it apparent that the aborigines possessed æsthetic gifts and appreciation of a high order, and it may be said without great risk of contradiction that no known people while yet within the confines of the stone age has ever surpassed them in works of taste in sculpture, wood-carving, metal work, architecture, painting, and the ceramic and textile arts. They sought to beautify whatever they touched, and even the things of ordinary use were often embellished with painstaking care. While we think of this taste for elaboration and finish as due to the promptings of the æsthetic sense, there is no doubt that in large part it was due to the requirements of religion for there was little in the life of the Indian that did not have to be considered in its relation to the gods; and the gods, as created and interpreted by the priesthood, granted their favors especially to those who offered the first fruits of the land and the best that the hand of man could make.

With the Americans stone was used to shape stone, although in Mexico and Peru bronze had been made and was used to an undetermined extent. The implements were of the simplest kind—hammers of stone for fracture and hammers and rudely shaped picks and chisels for crumbling and incising, and stones of varied shape and texture for grinding and polishing. The processes were essentially the same, however, as those employed in civilized art, although the devices for their operation were of the simplest kind. All are agreed that, considering the primitive character of the implements, the extent and perfection of the work are hardly short of marvelous.

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Skill in the technic of the sculptural arts was acquired through the manufacture of implements and utensils long before the thought of representing a living form entered the human mind, and it may be surmised that the first suggestions of the sculpture of living forms in the round came through attempts to elaborate suggestive natural forms in stone such as are plentifully supplied by calcareous and other concretions. Thus a concretion suggesting an animal shape would be improved by boring holes for eyes and scratching a slit for the mouth, and so on, and later sculptured forms would be produced *ab initio*. Although pick and chisel-like implements of stone were employed by the sculptor of primitive times, it is not to be forgotten that without the stone hammer these tools could not have been made.

Courtesy of Illustrated Outdoor World and Recreation.

SPECIMEN OF AZTEC SCULPTURE.

In regard to the artistic achievements of the American aborigines as far as sculpture in the round is concerned, Dr. Holmes writes: "Sculpture of the human form in the round, practiced in many simple forms from very early times, lagged behind the other forms of representation as culture advanced, doubtless in large part because of the difficulties of execution. In the main it remained in the archaic stage to the end. Numerous examples of sculpture of the human form in the round are recovered from the sites of ancient culture centers, but none are so elaborated as to lead to the belief that they were carved, as was the case with Greek statuary, to gratify the æsthetic sense simply." The image pictured above, representing Huitzpoctli, the Aztec god of war, is a typical example of Aztec sculpture in the round.

The initial steps in the representatives art, both plastic and graphic, were essentially religious in inspiration, and the sculptor devoted his attention to the carving of images of the multifarious deities to which he imagined himself subject. In their higher phases these arts passed gradually under the influence of the aesthetic sense, and the spell of beauty for beauty's sake supplemented the sordid requirements of superstition.

Sculpture of the human form in the round, practiced in many simple forms from very early times, lagged behind the other forms of representation as culture advanced, doubtless in large part because of the difficulties of execution. In the main it remained in the archaic stage to the end. Numerous examples of the sculpture of the human form in the round are recovered from the sites of ancient culture centers, but none are so elaborated as to lead to the belief that they were carved, as was the case with Greek statuary, to gratify the aesthetic sense simply. Relief work, however, comparatively easy of execution, rose to distinctly higher levels, and many examples exist in which appreciation of the perfection of line form and proportion are clearly manifest. Portraiture was practiced in a formal way, the generalized national type of visage being habitually adhered to with possibly individualized details of features, dress, and symbolism which served to distinguish particular subjects. Facial expression ran the gamut from the roughed-out block of stone to extreme forms of the grotesque and the awe-inspiring, but the smile or laugh as we understand these expressions of emotion seem to have found little place in aboriginal art. In the greater culture centers of Mexico and Central America, carvings of the human figure in the full round are rare. Figures seated, standing, or reclining are rigid in pose, and the limbs and hands are rarely entirely free from the blocked-out body, while the treatment of the hands and feet clearly indicates the narrow limitations of the art as a means of expression.

Numerous photographs of sculptural antiquities unearthed in Mexico, Central American and South American countries serve to illustrate the article. These are described in considerable detail by Dr. Holmes, and include specimens of Aztec origin as well as examples from Mayan ruins of Yucatan and Central America. According to Dr. Holmes, these are not necessarily representative of the best work of these aboriginal sculptors, being selected from such as escaped mutilation or destruction during the Spanish conquest. They are sufficiently remarkable, however, to demonstrate that the aboriginal Americans had arrived at quite a high stage of development in their artistic life.

South American Trails, by Lee Garnett Day, in The American Museum Journal for January, 1916, is an account of an expedition financed by Messrs. Alfred M. Collins and Lee Garnett Day and undertaken with the double purpose of hunting South American game and collecting zoological specimens on a transcontinental journey from Mollendo on the west coast to Para, Brazil, on the east. The difficulties as well as the pleasures of such a trip may be surmised from the following excerpts from Mr. Day's article.

Probably no place in the world gives the traveler more contrasts in trail, scenery, and climate than do the Andes in the last range of the Cordilleras. From the barren snow line at the ridge down to the headwaters of the great Amazon system is but a

Courtesy of The American Museum Journal. Photo by Collins-Day Expedition.

NATIVE BOATS ON LAKE TITICACA.

"Balsas anchored in the shallow marshes near the shore. The balsa is made of bundles of reeds lashed together. It is the same sort of craft that was in use by the Indians at the time of the Spanish conquest, more than four centuries ago, and is to-day in general use for native commerce along Lake Titicaca."

Courtesy of The American Museum Journal.

START OF THE PACK TRAIN FOR COCHABAMBA, BOLIVIA.

Adjusting the packs. "The most convenient unit of baggage for transportation of this kind is a small fiber trunk or case holding 80 pounds. Two trunks make a perfect pack for the animals, compact, easy to cinch, and of proper balance. During the rainy season all instruments, food, and clothing must be packed in bags impervious to moisture. The constant and daily rain—not to mention frequent wettings from crossing deep fords and mountain freshets—soon rusts arms and penetrates film packs. Our moving-picture camera was inclosed in three separate waterproof containers and the films protected by paraffined tin cases." (From "South American Trails," by Lee Garnett Day, in the January, 1916, number of The American Museum Journal.)

Courtesy of The American Museum Journal. Photo by Collins-Day Expedition.

SOUTH AMERICAN TRAILS.

"A mountain cactus lends its green to the high deserts of Peru."

few hundred miles, yet in this distance four distinct changes in the fauna and flora are apparent. Starting over a hard open road where we made 18 or 20 miles a day, the trail winds down through a rolling country until the last pass is crossed and the first signs of tropical vegetation appear. Then through the mountains of the Yungas the route lies over forested hill and dale or along narrow-ledge trails, and eventually reaches lower planes where the freshets turn into narrow streams and the streams at last into rivers. Here amidst the most abundant tropical growth, the paths underfoot more often resemble swamps than terra firma and 5 or 6 miles were considered a good day's work. In fact the stream beds often proved better trails than the machete-cut roads through the palm and canebrakes.

Crossing South America from Mollendo on the west coast to Para on the east, by far the most eventful part of the journey is the 500 miles by mule train from Cochabamba, high in the Cordillera, to Todos Santos, the headwaters of the Amazon, 3,400 miles above its mouth. Cochabamba itself is a city of 60,000 inhabitants, the greater number of whom have never left its suburbs. A railroad is in course of construction, but from Arque, the end of the rails, all commerce must pass by mule pack for two days over the bowlders of the river bed. We reached Cochabamba from Mollendo by rail, lake steamer, and coach. After crossing the first two ranges of the Cordillera by rail, we ascended the third by pack train, starting from Cochabamba. Our party consisted of Messrs. Alfred Collins, Willard Walker, George K. Cherrie, Robert Becker, and the writer; and after securing 28 mules, a chief arriero or mule driver, and two Indian helpers, we started for the head of the pass and the tributaries of the great Amazon River beyond.

The mule trail from Cochabamba to Todos Santos is far from an easy one to follow, notwithstanding that it is constantly traveled, being the route for most of the commerce between the low, hot grazing lands of Bolivia at the eastern base of the Andes, and the high well-populated table-lands around La Paz, Cochabamba, Oruro, and other cities. It is always very narrow, passes through heavy woods, over ridges, along sides of cliffs, up or down a stream, and is often difficult even to locate. Especially is this true in the rainy season when pools of mud and tangled roots encumber the way in the woods and mule drivers passing previously have often left the path in search of better going, thus making false trails unsafe to follow unless with a very experienced guide. * * *

At Sal-si-puede ("get out if you can")—there were many places to which this name was applicable—we had to dig or cut out a track along the face of a cliff where a slide had occurred, to make room for the pack animals to pass. This was not only difficult to do on account of the steep decline and precarious footing; but also the work had to be very well done because if the pack of a mule should catch against the side of the cliff in transit the animal would be tipped over into the river Espirito Santo a thousand feet below.

From Sal-si-puede onward the mules waded streams, floundered through mud to their middles, and labored over fallen logs, often on a trail so narrow and so overgrown that it was necessary constantly to use the machete to clear the path of hanging vines and dense undergrowth. * * * The advantage of having compact units of baggage was made evident in this locality. The jamming of baggage between saplings or in a washed-out gully would necessitate a halt, and while the load on the mule that had caused the halt was being recinched a dozen other mules would start exploring the neighboring thickets. Sometimes the whole train would be thrown into confusion and all the pack animals would have to be rounded up and the packs readjusted.

It was in this section that we found the first traces of the vampire bats, which later cost us two mules. These blood-sucking mammals descended every night, and in the morning the backs of several of our animals would be wet with blood. The bats

Courtesy of The American Museum Journal. Photo by Collins-Day Expedition.

ALONG OLD SPANISH TRAILS IN THE ANDES.

"View in the Yungas Valley on the Todos Santos trail, which is the route for most of the commerce between the low, hot, grazing lands of Bolivia and the high, well-populated table-lands around La Paz, Cochabamba, and Oruro. The trail is always narrow and winds through heavy woods, along sides of cliffs, and across mountain streams." (From "South American Trails," in the January number of The American Museum Journal.)

Courtesy of The American Museum Journal.

SOUTH AMERICAN TRAILS.

"A characteristic steep climb through the Andes. The Bolivian Yungas between Todos Santos and the Chapréa rank among the natural wonders of the world. Daily the changing vistas of palms, ferns, and flowers, with cascades and waterfalls, make a delightful background for the abundant bird life."

attacked the spots on the skin which had been chafed by the packs, and although we tried several methods to keep them off they continued the injuries, so that the mules were slowly weakened, and there came a time when two of them could travel no farther.

The season was not good for collecting, since the birds were molting and the rains heightened the difficulties of preserving the specimens and made trapping unsatisfactory; but the change in the fauna and flora as each new level was reached proved intensely interesting. From rugged and barren cliffs at the crest of the Andean pass each day brought more abundant foliage, until in the mountains of the Yungas, at an altitude of 5,000 or 6,000 feet, a profusion of tropical growth appeared.

* * * * * * *

There were no wild animals of a kind to be feared by man along this route. Along the banks of the Chapare we found evidences of tapir, paca, capybara, jaguar, tiger cat, peccary, deer, coati, agouti, and others, but the high water, which varies sometimes 40 feet between seasons, had driven game to the highlands, making hunting possible only at the highest points along the Mamore. Bird life was most abundant in Bolivia; a collector could spend several seasons to advantage in these little-traversed routes across the South American countries. When the incidental mishaps and inconveniences are forgotten, the Bolivian Yungas between Todos Santos and the Chapare may well be compared with other natural wonders. Daily the vistas of palm, fern, and floral growth, with cascades, waterfalls, and freshets, make a delightful background for the bird and other animal life.

* * * * * * *

The best shooting of our trip, from the sporting point of view, was at Pampa del Arrieros, in Peru, 13,000 feet elevation. Making this small town a base, we worked up to the snow line, which begins between 18,000 and 19,000 feet above sea. Between the heights of 13,000 and 17,000 feet we obtained several specimens of vicuña and guanaco. Groups of these will be mounted at the Field Museum, Chicago. Hunting in the Andes presents few difficulties except those due to altitude and the attendant atmospheric conditions. Above 15,000 feet, climbing in the rarefied air is slow and laborious, and the few nights we spent in the open at these altitudes were cold and sleepless.

In spite of the weather drawbacks, which made collecting often impossible and preparing specimens difficult, the expedition was able to obtain 1,500 bird skins and about 500 small mammals for the American Museum.

The Great Pan American Opportunity, by John Barrett, Director General of the Pan American Union, in the March number of The Engineering Magazine (New York), is a comprehensive review of the present status of Pan American relations from a social, political, and economic point of view. After reviewing the development of Pan American commerce during the past 10 years, and describing the work of the Pan American Union in its varied activities, Mr. Barrett takes occasion to refute some of the prevailing erroneous impressions anent Latin American political disturbances, the presumed neglect of Latin American commerce on the part of the United States, and the general idea that the Latin American peoples hate or distrust the people of the United States. He furthermore suggests the adoption of certain measures which in his opinion would materially strengthen the social and commercial relations between the United States and the Latin

American Republics, among the most important being those outlined in the following excerpts:

Possibly there is no greater need of the hour in the promotion of Pan American relations than that of increasing investment of United States capital in each and all of the Latin American countries. Before the European war broke out the governments and private enterprises of these 20 countries placed nearly all of their loans with European financiers. The war has put an end to that source of supply, and it will be many years before they will again be able to furnish money to Latin America. It is, therfore, absolutely necessary for the bankers, the financiers, and the bond-buying element of the United States to meet the situation and show a practical spirit of cooperation for the benefit of our sister Republics. It is just as necessary for these countries to have money in working out their material and political progress as it has been for the United States, as a whole, and its individual States to have money for their development. If the financial interests of the United States do not respond to this need, they will have only themselves to blame if, during the next 10 years, Europe recovers the trade and position which she has lost through the war. It is my firm conviction that if the bankers and financial leaders of the United States will loan $1,000,000,000, or $100,000,000 a year to Latin America for the next decade, they will be rewarded by an increase of a billion dollars in the exchange of trade between the United States and these countries. A careful study of the evolution of Latin American governments, material enterprises, and prosperity shows that the commerce of European countries has grown most rapidly in the lands of Latin America where they have invested the most capital.

It is not easy to measure the opportunities in all parts of Latin America which await United States capital. The opening up of rich interiors with railway construction, the harnessing of numerous water powers, the bringing to the surface of vast mineral wealth, the marketing of the valuable timbers of the immense forests, the extension of irrigation from the stored waters of the Andes, the improvement of agricultural methods, the mastering of the jungle through modern sanitary processes as exemplified at Panama, the improvement of harbors and ports, and the utilization in a thousand ways of the resources of Latin America, provide opportunities for United States capital equal to those which it has had in the United States during the last 50 years.

Let the American financial interests meet the situation in the right way without overcharging for the money invested or without acting as if they expected to get all the advantages, and there will come a change which will have a profound influence upon Pan American friendship as well as on Pan American commerce.

It is not necessary for me here to enlarge upon the necessity of developing to the highest degree of efficiency an improved steamship service. It will be absolutely impossible for United States commercial and financial interests to take advantage of the opportunities offered, and for Latin Americans, in turn, to take advantage of their cooperation, unless there are worked out and made permanent the best steamship connections between the principal ports on the Atlantic, Gulf, and Pacific coasts of the United States on the one hand, and the representative ports of the Pacific and Atlantic coast lines of Latin America. There is a demand for this on the part of Latin America just as much as there is on the part of the United States, and there is no question but that the Latin American Governments will be willing to do their share with the United States Government in the improvement of these facilities. There has been great progress already made, especially in the Gulf and Carribean service, and, to some extent, between the Atlantic ports of the United States and those of the corresponding section of Latin America, but the latter is still capable of additions in passenger and freight vessels which are much needed, while upon the western coast of South America there can be a decided change for the better.

Another great necessity is that of the establishment in all parts of Latin America of banks controlled by United States capital. The wise initiative in this direction

which has already been taken by the National City Bank of New York has proved the truth of this contention. This institution has made a decided success of its experiment in Buenos Aires and Rio de Janeiro, and there is no reason why the great banking institutions of other sections of the United States, especially of the Central West and Pacific coast, should not inaugurate similar enterprises. There is room in Latin America for additional banking facilities, and it is probable that the National City Bank of New York would be no more antagonistic to such extension than they are to the building up of other banks in the United States.

Mr. Barrett closes his article by a brief reference to the beneficial effects on the political relations between the United States and the countries of Latin America resulting from the great financial conference of May, 1915, and the more recent Pan American Scientific Congress which assembled in Washington in December, 1915, and January, 1916. Of the latter he writes:

While this congress could not discuss political questions, there emanated from it an atmosphere and suggestion of Pan American solidarity, Pan American comity, and Pan American mutuality. There seemed to be an underlying thought that the present tendencies of the day are evolving the Monroe doctrine into a Pan American doctrine—that is to say, from a doctrine promulgated and supported alone by the United States to one promulgated and supported by all of the American Republics. If there has been opposition in Latin America to the Monroe doctrine in the past it has not been due to the doctrine itself so much as to the interpretation thereof. The Latin American countries and peoples rightfully object to any dictatorial attitude on the part of the United States as if it were both "papa" and "mama" and they were inferiors or children not yet of age. On the other hand, that interpretation of the Monroe doctrine which means that each Latin American country would stand for the sovereignty and integrity of the United States and every other American Republic just as quickly as the United States itself would stand for the sovereignty and integrity of any American Republic is the interpretation which will make it enduring and which will pave the way for the evolution of that kind of Pan Americanism which means that Pan America will be the triumphant force in civilization and progress of the world.

BOOK NOTES

Modernizing the Monroe Doctrine, by Charles H. Sherrill.

This book has been anxiously awaited by all persons interested in Practical Pan Americanism. Mr. Sherrill stands in the foremost rank of the active progressive Pan Americans of the United States, and the propaganda he has carried on since he returned from Argentina, where he was United States minister several years ago, has done much to promote both commerce and friendship among the American Republics. In publishing this work he has taken a step which will be greatly appreciated by all persons interested in both practical and theoretical Pan Americanism. Inasmuch as it contains an introduction by Nicholas Murray Butler, president of Columbia University and one of the leaders of public opinion in the United States, it would seem appropriate to reprint Dr. Butler's opinion as the best review that possibly could be published of it. President Butler says:

"In the following pages Mr. Sherrill offers a vigorous and stimulating discussion of some of the most interesting and most important questions that now confront the

American people. He touches on many disputed points and makes some novel and even radical proposals. In doing these things he stimulates and, indeed, compels the reader to think for himself on questions of international politics, and this is just now the most crying need of the American people.

"Circumstances over which we have had no control, and conditions which we have been powerless to change, have completely altered the relation of the United States to the rest of the world during the lifetime of the present generation. International trade we have always had more or less, and the tide of immigration has flowed strongly toward our shores for the greater part of a century. Science, which knows no national boundaries and no limitations of language, has always been a force making for international appreciation and understanding, as have the fine arts, while literature has lagged only a little distance behind. The world has been internationalized almost without our knowing it, and when the storm of war broke with frightful suddenness on August 1, 1914, it found in operation a silent but powerful system of international intercourse and international dependence of which it straightway made a complete and costly wreck. Americans, who had never before thought of the world outside the limits of their own countries as other than part of another and distant planet, were forced to appreciate that they, too, were bound to men and women, whom they had never seen and whose language they had never heard, by invisible ties that only a world war could break or destroy. In a twinkling of an eye international shipping, international trade, international finance, international communication of every sort fell from their place of high security and comfort to positions of the utmost danger and damage. This was as emphatic and as severe a lesson in what internationalism means as the world, including America, has ever received.

"Mr. Sherrill deals chiefly, as the title of this book directly suggests, with problems of the American Continent and with other international problems that grow out of these. The present is the psychological moment to draw the Republics of the three Americas together, since they are all alike removed from the immediate theater of the world war. They are all alike republican in their form of government, and they are all alike dealing with the problems that face new peoples with fresh soil and unexhausted natural resources. It would be a mistake, however, to suppose that the several American Republics in drawing closer together are thereby thrown in contrast with the older nations of Europe and of Asia, or are in any way to be brought in antagonism to these. On the contrary, the drawing together of the Republics of the three Americas should be rather a symbol of that greater and larger drawing together which the whole world will one day witness. The war may postpone, but can not wholly prevent, the march of the human spirit toward its ideals of universal brotherhood, with liberty and justice assured to all men. There are not two worlds, an American world and a non-American world, but only one, and the part which the Americas will play in that one world will depend upon their faithfulness to their own ideals and upon the sincerity and permanence of their feeling of comradeship for each other and of friendship for their brothers in other and older lands than their own.

"If from these pages Americans shall learn to look out across the waters that bound them on the east and west and south, and if they learn that it should be quite possible for them to live in as great harmony and security with their neighbors overseas as they do with their neighbors to the north, who are separated but by a long imaginary and quite undefended line, Mr. Sherrill may be happy, indeed. In that case his years of diplomatic service, his close study of American commerce and its needs, and his earnest efforts to play the part of a high-minded American citizen, will not have been in vain.

"The happiness of the world, as well as its peace, will be promoted when men learn to look at world problems not from the viewpoint of their own nation alone but from that of other nations as well. Mr. Sherrill's book will help Americans to see the world problems as other peoples see them."

Twentieth Century Impressions of Chile. Its history, people, commerce, industries, and resources. Director in chief: Reginald Lloyd. Editors: W. Feldwick and L. T. Delaney. Historian: José Plá Cárceles. London, [Lloyd's Greater Britain Publishing Co., Ltd.], 1915. 568 p. Map., illus. 4°.

The Amazing Argentine a new land of enterprise. By John Foster Fraser. New York, Funk & Wagnalls Co. [1914]. Illus., plates. viii, 290 p. 8°. Price, $1.50.

A trip to South America. Exercises in Spanish composition. By Samuel M. Waxman. Boston, D. C. Heath & Co., 1916. 100 p. 12°.

The real Argentine. Notes and impressions of a year in the Argentine and Uruguay. By J. A. Hammerton. New York, Dodd, Mead & Co., 1915. Illus., plates. 453 p. 8°. Price, $2.50.

Annals of the Carnegie Museum. Vol. X, Nos. 1–2. W. J. Holland, Editor. [Pittsburgh] Published by the authority of the Board of Trustees of the Carnegie Institute, 1916. (Papers on fishes of South America and birds and reptiles of the Isle of Pines.)

Ways to lasting peace. By David Starr Jordan. Indianapolis, The Bobbs-Merrill Co., Publishers. 1916. 254 p. 8°. Price, $1.

America and her problems. By Paul H. B. D'Estournelles de Constant. New York, The Macmillan Co., 1915. xxii, 545 p. 8°. Price, $2.

The future of South America. By Roger W. Babson. Boston, Little, Brown & Co., 1915. Illus., plates, map. viii, 407 p. 8°. Price, $2.

Through the Brazilian wilderness. By Theodore Roosevelt. New York, Charles Scribner's Sons, 1914. Illus., plates, map. xiv, 383 p. 8°. Price, $3.50.

Fear God and take your own part. By Theodore Roosevelt. New York, George H. Doran Co., 1916. xii, 414 p. 8°. Price, $1.50.

South of Panama. By Edward Alsworth Ross. New York. The Century Co., 1915. Illus., plates. xvi, 396 p. 8°. Price, $2.40.

The Tropics. Their resources, people, and future. A description of the tropical lands of Africa, Asia, Central and South America, Australia and the Pacific; their natural products, scenery, inhabitants, and industries, and the possibilities of their future development. By C. R. Enock. New York, Charles Scribner's Sons, 1915. Illus., plates, map. xxiii, 466 p. 8°. Price, $4.50.

Brazil and the Monroe doctrine. By Dunshee de Abranches. Rio de Janeiro, Imprensa Nacional, 1915. 72 p. 8°.

The diplomatic protection of citizens abroad or the law of international claims. By Edwin M. Borchard. New York, The Banks Law Publishing Co., 1915. xxxvii, 988 p. 8°. Price, $8.

Spanish short stories. Edited with introduction, notes, and vocabulary. By Elijah Clarence Hills and Louise Reinhardt. Boston, D. C. Heath & Co., 1912. xviii, 323 p. 12°. Price, $1.

Doña Clarines y mañana de sol. Por Serafín y Joaquín Álvarez Quintero. Edited with introduction, notes, and vocabulary. By S. Griswold Morley. Boston, D. C. Heath & Co., 1909. xvi, 136 p. 12°. 50 cents.

Mineral resources of Minas Geraes, Brazil. By Albert F. Calvert, London, Spon & Chamberlin, 1915. Illus., plates, maps. xvi, 100 p. 8°. Price, $2.

Journal of the National Institute of Social Science. Volume 1, Number 1 [New York], 1915. 242 p. 8°.

Cuba before the World. A comprehensive and descriptive account of the Republic of Cuba from the earliest times to the present day. Containing unembellished data for general information of history, system of government, education, sanitation, commerce, industry, agriculture, banking, society, touring, sports, and

Photo by White Studio.

SCENE FROM ACT I OF "GOYESCAS."

The opera "Goyescas," by the Spanish composer Granados, was given for the first time in the Metropolitan Opera House, New York, during the latter part of January, 1916. It is said to be the first opera that has been sung in Spanish in the United States. The author presents a series of scenes of the life of the people of Madrid during the first years of the nineteenth century. Many of such scenes were the subjects of the famous artist Goyas, and were copied in the magnificent tapestries of the royal palaces of Spain. Thus the name "Goyescas" was given to the opera. The music is based on the native airs and songs of the peninsula, and the new opera presents one of the most important works ever inspired by these charming Mediterranean melodies.

Courtesy of Art and Archæology.

THE PREHISTORIC SOAPSTONE WORKERS OF CALIFORNIA.

In the California Building at the Panama-California Exposition at San Diego, among other interesting features is found an exhibit of the works of the American aborigines collected by Dr. E. L. Hewett, Director of the School of American Archaeology. The group pictured above illustrates the mining and shaping of soapstone as carried on by the ancient inhabitants of Santa Catalina Island, off the coast of Southern California, and was prepared at the National Museum at Washington for the Panama-California Exposition. In the group the man is shown cutting out the roundish mass of soapstone from the solid wall of the material, while the woman with a rude implement roughs out the globular pot.

notes of interest. Compiled and edited by Gral. Dr. Manuel F. Alfonso [and] T. Valero Martinez, Havana, Published by The Souvenir Guide of Cuba Co., 1915. 223 p. Illus. 8°. Price, $2.

Argentine Meteorological Service. History and organization with a condensed summary of results. Prepared under the direction of Walter G. Davis, chief of the service. Buenos Ayres, Printing Establishment of the Ministry of Agriculture, 1914. Maps. 181 p. 4°.

Hazell's annual for the year 1916. A record of the time. Giving the most recent and authoritative information concerning the British Empire, the nations of the world, and all the important topics of the day with copious index. London, Hazell, Watson & Viney, 1916. lxxii, 623 p. 8°. Price, 3 shillings 6 pence.

Talking English. A pronouncing manual for teaching the English language. Third edition. By George R. Montgomery. New York, Published by George R. Montgomery, 1915. xiv, 217 p. 8°. Price, 90 cents.

"First Aid" in the study of Spanish. Book I. Four simple rules will show you how English words become Spanish words. The leading rules for pronunciation and accent. Twelve rules for the division of Spanish words. By José Sirvent. Washington, D. C., 1915. 64 p. 8°.

A geologic reconnaissance of the Cuzco Valley, Peru. By Herbert E. Gregory. (Contributions from the Peruvian expedition of 1912 under the auspices of Yale University and the National Geographic Society.) [From the American Journal of Science, Vol. XLI, January, 1916.]

The doctrine of intervention. By Henry G. Hodges. Princeton, The Banner Press. 1915. xii, 288 p. 8°. Price, $1.50.

The lower Amazon. A narrative of explorations in the little-known regions of the State of Pará, on the lower Amazon, with a record of archaeological excavations on Marajo Island at the mouth of the Amazon River, and observations on the general resources of the country. By Algot Lange. New York, G. P. Putnam's Sons, 1914. Illus., plates, maps. xxv, 468 p. 8°. Price, $2.50.

Tierra Uruguaya. Descripción geográfica de la República Oriental del Uruguay. Tomo 1. Montevideo, Libreria y papeleria "La Nación," 1913. Illus. vii, 310 p. 8°.

Descripción geográfica de la real audiencia de Quito que escribió Don Dionisio de Alsedo y Herrera. [New York.] The Hispanic Society of America, 1915. xxxv, 100 p. 4°.

Directorio oficial y guia general de la República de Guatemala. Con derecho de propiedad literaria concedido por el supremo gobierno de la República. Marroquin Hermanos, Editores propietarios. Guatemala City, Papelería y librería "Casa Colorada" de Marroquin Hermanos, 1915. cxii, 914 p. 4°.

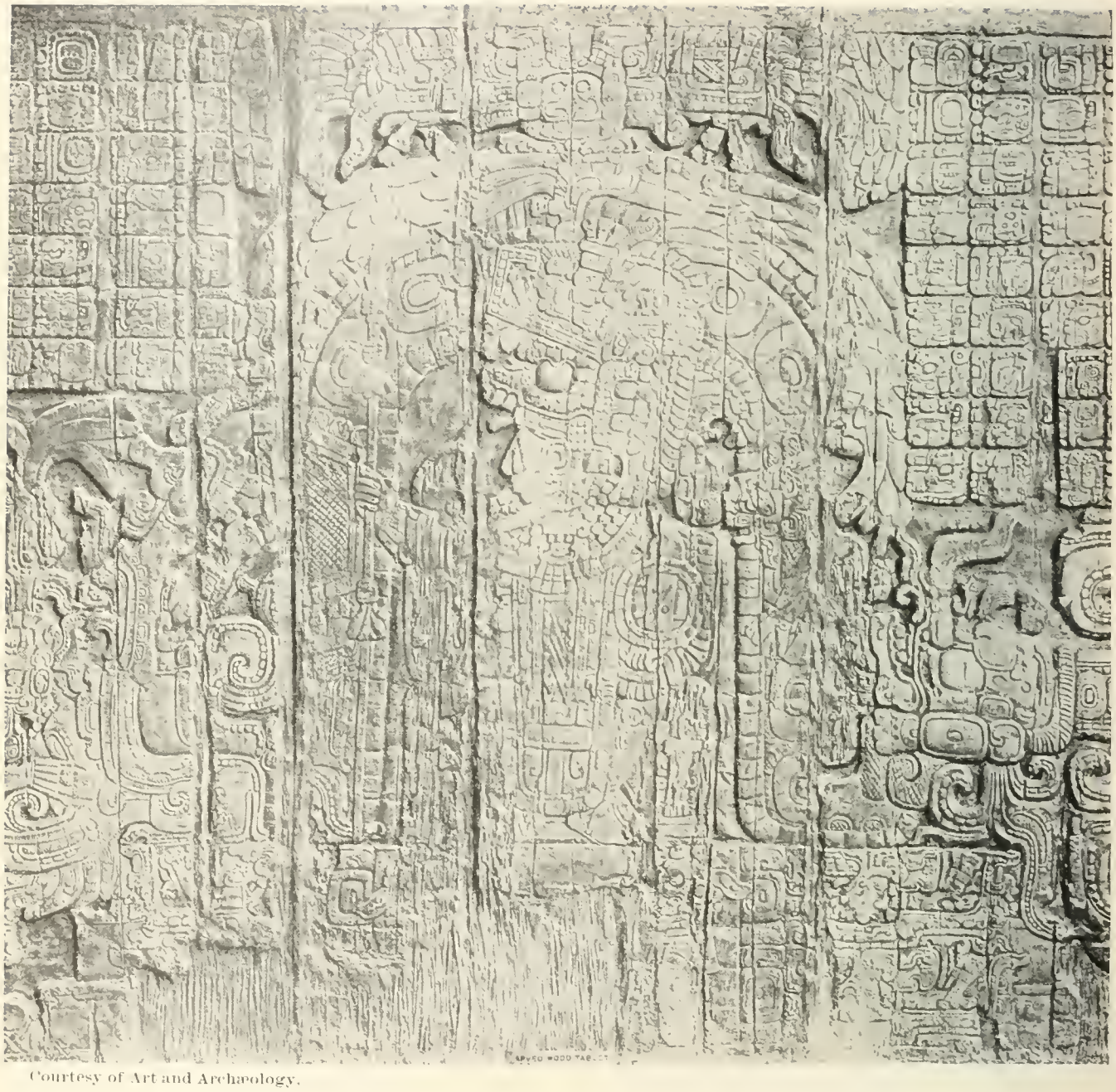
Pitman's Spanish commercial reader. A selection of readings dealing with commerce, finance, industry, etc., for the use of commercial students and business men. By G. R. MacDonald, New York, Sir Isaac Pitman & Sons (Ltd.), [1915]. vii, 170, 16 p. 8°. Price, $1.

The Argentinè Republic. [Argentine National Commission]. Panama-Pacific Exposition, San Francisco, 1915. illus., plates. 88 p. 12°.

The South Americans. By W. H. Koebel. New York, Dodd, Mead & Co., 1915. illus., plates., map. vii, 366 p. 8°. Price, $3.

Portugal of the Portuguese. By Aubrey F. G. Bell. New York, Charles Scribner's Sons, 1915. Illus., plates. x, 268 p. 12°.

The Haitian revolution, 1791 to 1804. Or side lights on the French revolution. By T. G. Steward. New York, Thomas Y. Crowell Co., 1914. ix, 292 p. 8°. Price, $1.25.



Courtesy of Art and Archaeology.

REPLICA OF AN ALTARPIECE FOUND AT TIKAL, GUATEMALA.

Among many other reproductions of Maya art to be found in the California Building at the Panama-California Exposition is this remarkable specimen of Maya wood carving. It is a replica of the famous altar panel, carved from zapote wood in low relief, from the Temple of the Sun at Tikal, Guatemala. The design is exceptionally elaborate, and in execution is not excelled by any similar work in America.

Courtesy of Arts and Decoration.

THE RING.

The above is a reproduction of one of John W. Alexander's noted paintings which is in the collection of the Metropolitan Museum of Art in New York City. Mr. Alexander, who died May 7, 1915, was one of the foremost painters of the United States. He won the gold medal at the Paris Exposition of 1900; gold medal at the Buffalo Exposition in 1901; the Carnegie prize in the Society of American Artists; first prize, Corcoran Art Gallery of Washington; first gold medal prize, Carnegie Institution, Pittsburgh, in 1911, and many other distinguished honors, abroad and at home. In 1901 he was made Chevalier Legion d'Honneur. He had been president of the National Academy of Design, a post of honor which he resigned a few weeks before his death, and had for many years been one of the most active workers in the cause of art in the United States.

Christopher Columbus. By Mildred Stapley. New York, The Macmillan Co., 1915. xiii, 240 p. 12°. Price, 50 cents.

Aus dem erbe der Inkas Bolivien; eine geographisch ethnographische studie. Max Josef Von Vacano. Berlin, Dietrich Reimer (Ernst Vohsen), 1912. vi, 120 p. Illus., map. 8°.

Annals of the Association of American Geographers. Volume V, 1915. Harlan H. Barrows, Editor. [Chicago] Published by the Association, 1915. Illus., plates. 153 p. 4°.

Memoirs of the Carnegie Museum. Vol. VII, No. 1. The Cheirodontinae, a subfamily of minute characid fishes of South America. By Carl H. Eigenmann. Pittsburgh. Published by the authority of the board of trustees of the Carnegie Institute. December, 1915. Illus., plates, map. 99 p. 4°.

Almanach de Gotha. Annuaire généalogique, diplomatique et statistique 1916. Gotha, Justus Perthes, 1916. xxiv, 1220 p. 12°. Price, 10 marks.

"Después de la Lluvia el Sol." Comedia en un acto y en prosa. Expresamente arreglada para su uso en escuelas y colegios angloamericanos anotada en inglés por R. Diez de la Cortina. New York, R. D. Cortina Co., 1914. 36 p. Price, 25 cents.

Episodios en Español y en Inglés. I, Don Antonio Solias; II, Hernán Cortés (Conquista de México época de Carlos V); III, Dos Rivales (Batalla de San Quintín, Reinado de Felipe II); IV, Napoleón en Rambouillet (Época de Napoleón I). Por R. Diez de la Cortina. Cuarta edición. New York, R. D. Cortina Co., 1901. Price, $1.

Amparo. Novela en Español y en Inglés. Sinopsis de una muy celebrada del popular autor de "El Martir del Gólgota." Enrique Pérez Escrich. Libro espresamente adaptado para el uso de los estudiantes que aprenden el inglés o el castellano. Por R. Diez de la Cortina. New York, R. D. Cortina Co., 1910. 155 p. 12°. Price, $1.

Narraciones en Español y en Inglés. Una madre (Episodio de la batalla de Trafalgar). La flor de las ruinas, la conciencia, el escapulario. Por R. Diez de la Cortina. Cuarta edición. New York, R. D. Cortina Co., 1910. 185 p. 12°. Price, $1.

Modelos para cartas en Español y en Inglés con extensos vocabularios y fraseologia comercial idiomática y tecnológica; tablas comparativas de pesas, monedas y medidas; modelos para documentos de todas clases; abreviaturas, modismo, buen tono; formulario epistolar, comercial, social y de familia; cartas históricas célebres, etc., etc., todo en ambos idiomas. Por R. Diez de la Cortina, 32a edición. New York, R. D. Cortina Co., 1915. viii, 174 p. 12°. Price, $1.

The Cortina method intended for self-study and for use in schools. Spanish in twenty lessons with a system of articulation based on English equivalents, for acquiring a correct pronunciation. By R. Diez de la Cortina. Eighty-third edition. New York, R. D. Cortina Co., 1915. xiv, 400 p. 12°. Price, $1.50.

El Indiano. Comedia en tres actos y en prosa en Inglés y en Español. Inspirada en una de las mejores obras del famoso vate Garcia de la Vega. Por R. Diez de la Cortina, Décimoséptima edición. New York, R. D. Cortina Co., 1913. 43 p. 12°. Price, 40 cents.

World map 1605. Willem Jansz. Blaeu. Facsimile of the unique copy belonging to the Hispanic Society of America, in eighteen sheets with key plate text, by Edward Luther Stevenson. New York, The Hispanic Society of America, 1914.

The West India Committee map of The West Indies. [1914] Scale 1:3,500,000 (55 miles=1 inch). London, Messrs. George Philip & Son (Ltd.), size 34 x 45 inches. Price 10 shillings 6 pence.

Courtesy of The American Museum Journal.

MODEL OF THE "PORTUGUESE MAN-OF-WAR."

This beautiful produet of the sea is in reality a colony of animals that floats on the surface of warm seas. One of the individual animals is the transparent bladder-like float, blue, purple, and crimson tinted, which sails before the wind and trails with it under the surface the other members of the colony, some of which have the form of long retractile streamers, armed with rows of stinging cells, said to be poisonous, which serve as the offensive and defensive force, and which sometimes extend to a length of 40 feet. In the West Indies these animals are encountered in large numbers in the warm Gulf Stream.

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED TO MARCH 15, 1916.[1]

Title.	Date.	Author.
ARGENTINA.		
	1916.	
Laundry business in Buenos Aires	Feb. 4	John S. Calvert, vice consul, Buenos
Sanitary plumbing and supplies	Feb. 10	Do.
Argentine Notes: Commercial failures for January, 1916; Crop estimates for year; Bond issues to aid exploitation of oil fields; Live-stock exposition; Children's congress; Sale of horse meat.	Feb. 15	Do.
BRAZIL.		
Rubber tariff of Brazil; President vetoes bill proposing to revive amendments.	Jan. 11	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
Brazil's trade of 1915 compared with previous years	Feb. 7	Do.
Brazilian rock crystal	...do...	Do.
Brazilian spinning and weaving industry	...do...	Do.
Brazil law regarding importation of commercial travelers' samples.	Feb. 8	Do.
Educational status of Brazil	...do...	Do.
Exportation and marketing of fruits in Brazil	...do...	Embassy.
American exhibit receives gold medal at Rio fruit exposition.	Feb. 15	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
Financing municipal improvements	Feb. 16	Do.
Transfer of Araraquara Railroad properties	Feb. 17	Robert L. Keiser, vice consul, Sao Paulo.
Translation of contract governing French port company, operations of Rio Docks. Decree No. 8062.	Mar. 8	Alfred L. M. Gottschalk, consul general, Rio de Janeiro.
CHILE.		
	1915.	
List of principal hotels in Punta Arenas	Dec. 31	David J. D. Myers, consul, Punta Arenas.
	1916.	
Permission to establish American bank	Jan. 22	L. J. Keena, consul general, Valparaiso.
Agriculture in Chile	Feb. 1	Do.
Revenues and taxes	Feb. 2	Do.
Regarding market for ribbons	Feb. 15	Thomas W. Voetter, consul, Antofagasta.
Leather and manufactures thereof, 1913-14	Feb. 21	L. J. Keena, consul general, Valparaiso.
COLOMBIA.		
Customs regulations, storage, etc	Feb. 26	Isaac A. Manning, consul, Barranquilla.
Colombian protest laws	Feb. 29	Do.
COSTA RICA.		
Increasing demand for American footwear in Costa Rica.	Jan. 14	Samuel T. Lee, consul, San Jose.
Photographic apparatus and supplies	Feb. 24	Do.
CUBA.		
Annual report, commerce and industries, 1915	Feb. 12	R. M. Bartleman, consul, Cienfuegos.
Regarding market for marble and granite	Mar. 10	Do.
GUATEMALA.		
Cochineal	Jan. 8	Stuart Lupton, consul general, Guatemala City.
Importations of oils into Guatemala, 1913-14; prices, duties, etc.	Jan. 19	Do.
Copyright protection	Mar. 6	Do.
HAITI.		
Report on commerce and industries, year ending Dec. 31, 1915.	Jan. 31	J. B. Terres, consul, Port au Prince.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America, but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

Reports received to March 15, 1916—Continued.

Title.	Date.	Author.
HONDURAS.		
	1916.	
Consular recommendations on Honduras trade	Feb. 7	E. M. Lawton, consul, Tegucigalpa.
Ceiba tree cotton	Mar. 1	F. J. Dyer, consul, La Ceiba.
MEXICO.		
Annual report, commerce and industries, for 1915	Jan. 25	Clement S. Edwards, consul, Acapulco.
Do	Jan. 31	Jesse H. Johnson, consul, Matamoros.
Do	Feb. 5	William P. Blocker, consul, Piedras Negras.
Exportation of hides prohibited after Mar. 31, 1916	Feb. 15	William W. Canada, consul, Veracruz.
Railway connections	Feb. 19	William P. Blocker, consul, Piedras Negras.
Annual report, commerce and resources, calendar year 1915.	Feb. 26	Wilbert L. Bonney, consul, San Luis Potosi.
Photographic goods in San Luis Potosí	...do....	Do.
Exports of coquito nuts, 2 months, 1916	...do....	A. Gordon Brown, vice consul, Mazatlan.
Report on commerce and industries, 1915	Feb. 27	Frederick Simbrich, consul, Nogales.
Do	Feb. 29	Philip O. Hanna, consul general, Monterey.
Annual report, commerce and industries, 1915	Undated.	Thos. D. Edwards, consul, Ciudad Juarez.
Traffic in liquors prohibited	Mar. 4	Homer C. Coen, vice consul, Durango.
Conditions in San Luis Potosí	Mar. 7	Wilbert L. Bonney, consul, San Luis Potosi.
Automobile industry	Mar. 14	William P. Blocker, vice consul, Piedras Negras.
NICARAGUA.		
List of clubs in Bluefields	Feb. 29	Cornelius Ferris, jr., consul, Bluefelds.
PANAMA.		
Opening of national exposition	Feb. 10	L. A. Clausel, vice consul, Panama.
Concession of land in Colon	Feb. 17	Julius D. Dreher, consul, Colon.
PARAGUAY.		
Translation of law raising export tax on hides and extract of quebracho.	Feb. 18	Samuel Hamilton Wiley, consul, Asuncion.
PERU.		
Cartels, syndicates, or combinations	Jan. 24	William W. Handley, consul general, Callao.
Regarding manufacture and importation of ladies' hat frames.	Feb. 1	Do.
Financing municipal public improvements	Feb. 7	Do.
Increased Peruvian customs revenues	Feb. 12	Do.
Electric vehicles	Feb. 26	Do.
URUGUAY.		
Bill for abolition of export tax on jerked beef approved.	Jan. 11	H. F. Arthur Schoenfeld, chargé d'affaires ad interim.
American capital invested in Uruguay	Jan. 27	Herman L. Spahr, consul, Montevideo.
VENEZUELA.		
Commerce and industries for 1915	Jan. 20	Homer Brett, consul, Maracaibo.
Construction work, new bull ring	Jan. 22	Do.

ARGENTINE REPUBLIC

According to a recent Government report the production of PETROLEUM at Comodoro Rivadavia in 1915 averaged over 6,000 tons per month. The total output during 1915 amounted to 75,900 tons. It is estimated that in 1918 the production of these oil fields will be 480,000 tons, and in 1920, 840,000 tons. To aid the development of these deposits the Government on February 9 promulgated a decree authorizing the issue of petroleum bonds to the value of 15,000,000 pesos (paper peso = $0.4246), the proceeds of which will be used in increased exploitation of the fields.——The FOREIGN TRADE of the Argentine Republic for 1915 amounted to 785,173,376 pesos gold (gold peso = $0.965), or 164,101,335 pesos gold more than in 1914. The imports during 1915 aggregated 226,892,733 pesos and the exports 558,280,643 pesos. As compared with 1914, there was an increase in exports of 209,026,502 gold pesos, or 59.8 per cent, and a decrease in imports of 44,925,167 pesos, or 16.5 per cent. The principal countries from which imports were obtained were: United Kingdom, 67,781,867 gold pesos; United States, 56,158,904, showing an increase of 53 per cent over 1914; Italy, 21,168,379; Mexico, 15,118,395; Spain, 11,339,057; and Brazil, 10,381,501 gold pesos. The principal countries to which exports were sent were: United Kingdom, 164,972,021 gold pesos; United States, 89,842,833; Italy, 40,939,402; France, 40,355,986; Brazil, 21,905,246; Netherlands, 18,851,398 gold pesos. ——The Argentine Grain Exchange has received from its numerous correspondents over 400 entries for the GRAIN SHOW to be held in July. It is expected that more than 4,000 exhibitors will compete for the valuable prizes offered for each class of grain as well as for the varieties under each class.——Complete statistics of the NATIONAL CENSUS begun on June 1, 1914, will be published by the Department of the Interior during the latter part of March. Its scope has been greatly enlarged and will include statistics on all important branches of agriculture, commerce, and education. The new map of the Republic, prepared by a special commission of the Geographical Institute, will also be ready for publication at that time. Two editions of the map will be issued, 25,000 copies in the form of a wall map and 550 copies in atlas form. ——Extensive preparations are being made for the INTERNATIONAL STOCK EXPOSITION which will be held in Buenos Aires August 15–22, 1916. More countries will compete and more prizes in cash, cups, and medals will be offered than at any previous exposition. Exhibits will not be confined exclusively to stock, but will include all kinds of farm products and machinery. Entries will

be received till July 1.——In 1915 IMMIGRANTS to the number of 46,511 entered the Argentine Republic, of which Spain, Italy, and Brazil, respectively, furnished a majority.——Statistics for the city of Santa Fe show that it had a POPULATION of 72,000 inhabitants on December 31, 1915.——Under exhibits from the National Territories, the Department of Agriculture has recently added more than 50 varieties of native WOODS received from the Governor of Chaco.——A new HOSPITAL, completely fitted up with all modern apparatus, was inaugurated on February 14, 1916, in the city of San Francisco, Province of Cordoba. Funds for its erection were donated by the widow of ex-Gov. J. B. Iturraspe, in whose memory the hospital is named.——The official inauguration of the Buenos Aires & Western Railway Co.'s FREIGHT TUNNEL, connecting the station at Plaza Once with the port, took place on February 15. Freight traffic between the railway and ships can now be handled directly at the docks.——A recent executive decree prescribes the rules and regulations under which large tracts of land in the Territories of Chaco, Formosa, and Misiones will be opened for INDIAN COLONIES. The Government will furnish seed and farm implements with the object of promoting the cultivation of cotton, yerba mate, and other products.——A municipal decree of February 14 permits the sale of HORSE MEAT in all markets of Buenos Aires, provided the animals are killed in the slaughterhouses at Liniers, transported to the markets in wagons exclusively used for that purpose, and are there properly inspected and sold in separate stalls.——An executive decree of February 11, 1916, provides for the creation of an AVIATION SCHOOL under the direction of the Minister of Marine, to be located near the city of La Plata in the Province of Buenos Aires.——The President of the Republic has named Capt. Carlos Daireaux NAVAL ATTACHÉ to the Argentine Embassy in Washington.——The directors of the BANK OF THE NATION have contracted for the erection of a three-story building with all modern banking facilities at Bahia Blanca. The building is to be completed within a period of 18 months and will occupy 2,500 square meters of ground.——A recent decree prohibits the exportation of SUGAR, the present supply being needed for internal consumption.——The CATTLE SHOW to be held at Buenos Aires under the auspices of the Rural Society from the 7th to the 9th of May, 1916, promises to be one of the most interesting and successful ever held in the country. The exhibits will be divided into five sections and prizes will be awarded each section.——According to the latest report of the Director General of Mails and Telegraphs, at the end of 1914 there were in the Argentine Republic 84,626 kilometers of TELEGRAPH lines, with wires aggregating a length of 248,723 kilometers and with 3,195 telegraph offices, of

which number 1,372 were State offices, 1,816 railway or private offices, and 7 semaphoric offices with telegraph service. The employees in the telegraph service in 1914 numbered 10,146, the domestic telegrams sent aggregated 7,938,368, of which 416,102 were franked messages. The foreign messages transmitted numbered 1,418,942. The gross receipts from telegrams were 28,262,845 francs (franc = $0.193 U. S. currency), of which 7,337,149 francs were from the international service.

BOLIVIA

For the purpose of facilitating the attainment of a better knowledge of the mineral resources and the present condition of the mining industry of Bolivia, President Ismael Montes, under date of January 20, 1916, issued a decree providing for the establishment in the City of La Paz of a MINERALOGICAL MUSEUM to be used for the study, conservation and display of samples of the minerals and mineral products of the Republic collected from the owners of mines and smelters operating in the country, belonging either to Bolivian citizens or to foreigners. The museum is to have as many sections as there are departments, districts and mining zones in the Republic, and samples of ores and mineral products, properly labelled, will be filed therein so that they may be easily examined. A record will be kept of all samples received as well as of such as may be returned. The museum is to have a library consisting of books and publications relating to mining laws, mining and industrial processes, maps, etc. Under a law of June 8, 1912, which is still in force, companies and persons engaged in the mining industry in Bolivia are required to furnish the Government with three samples of their products, two for use in Bolivia and one to be sent to the consulate general in London for exhibition and propaganda work in that country.——The Government has authorized the Bureau of Telegraphs to proceed at once to the construction of a TELEGRAPH LINE from Viacha to Charana on the Chilean frontier.——The capital press has recently begun a propaganda looking to the systematic PLANTING OF TREES in the suburbs of the national metropolis as well as along the mountain sides and in the ravines in the immediate vicinity of La Paz.——The department of fomento has approved the sale by the Yungas railroad to The Vilaque Tin Mines of 1,000 meters of DECAUVILLE RAILWAY and ten small cars for the use of these mines.——The FINE ARTS EXPOSITION of Bolivian artists, held in La Paz early in February last, contained exhibits of paintings, sculpture, architecture, drawings, tracings, embroidery and drawn

work.——Cecilio Delgadillo, a Bolivian artisan of Oruro, has invented a MACHINE FOR WEAVING woolen, cotton, and silk fabrics.——On February 5, 1916, the new RAILWAY from Oruro to Uyuni, the gauge of which is one meter, was opened to public traffic.——The construction engineer of the Viacha WIRELESS telegraph station reports that the installation will be completed and opened to public service in October or November of the present year.——The Government of Bolivia has called for bids for the construction and operation of the SUCRE TO POTOSI RAILWAY, the state to guarantee for 20 years 6 per cent interest on the capital invested. Bids must be made in accordance with plans and specifications furnished by the Government, and are to be submitted to the department of fomento at La Paz not later than July 30, 1916.——In 1915 the exports of COPPER from Bolivia aggregated 2,037 tons, as compared with 368 tons in 1914. During the same period the exports of antimony were 1,315 tons, as compared with 120 tons in 1914.

BRAZIL

The total FOREIGN COMMERCE of Brazil for the year 1915, not including imports and exports of foreign specie and bank notes, according to the report of the minister of finance, was 1,605,630 contos paper (conto paper, about $250 United States currency) made up of imports to the value of 582,996 contos, and exports of 1,022,634 contos. The total value of the foreign trade for the year 1914 amounted to 1,312,833 contos, of which sum 561,853 contos represented imports, and 750,980 contos exports. There was, therefore, for the year 1915 an increase in imports of 21,143 contos and an increase in exports of 271,654 contos, or a net gain in the year's foreign trade of 292,797 contos. Cotton and Brazil nuts were the principal products that showed a decrease over the exports for 1914, while hides and sugar reached more than double the value exported in 1914.——The culture of CUBAN TOBACCO in Brazil has met with great success as shown by exhibits at the recent exposition held in Rio de Janeiro. The lowlands of the State of Rio are especially adapted to the best Habana varieties, and plantings from selected seed have produced a grade equal in color, size, and quality to that grown in Cuba.——A record shipment of FROZEN MEAT was recently made to Havre, when the *Roscommon* carried 2,300 tons, 1,300 tons from the port of Rio de Janeiro and 1,000 tons from Sao Paulo. It is estimated that the States of Minas Geraes, Sao Paulo, and Matto Grosso can easily furnish 20,000 head of cattle per month

without limiting the internal consumption. The cold-storage plants are being enlarged to a capacity of 6,000 tons per month and it is believed the exportation will reach that figure during the year 1916.——The Brazilian Aero Club will shortly install a separate AVIATION SCHOOL at Rio de Janeiro. Five new flying machines are being constructed to complete the equipment already on hand, and public exhibitions will soon be given in aerial navigation by experienced aviators.——More than 50 hectares of land have recently been acquired by a company organized at Pelotas, in the State of Rio Grande do Sul, for the growing of EUCALYPTUS TREES.——According to "A Rua," the Coastwise Navigation Co. and the Commerce and Navigation Steamship lines have increased all freight rates 10 per cent.——The Pan American Trade Expansion Co. has located BRANCH OFFICES at Curityba to promote the exploitation of yerba maté and the lumber industry in the State of Parana.——The Rockefeller International Health Commission is conducting scientific investigations in Brazil with a view to combating TROPICAL DISEASES.——The SECOND NATIONAL CORN EXPOSITION will be held at the Agricultural College of Lavras, in the State of Minas Geraes, July 19–21, 1916. More than three contos paper were distributed in awards at the first exposition held at Sao Paulo in 1914. No charge is made to exhibitors, and it is expected that the exhibits will be greatly increased owing to the present promising condition of the corn crop.——The Schapleigh Hardware Co. of St. Louis and New York has established in Rio de Janeiro a BRANCH STORE in which only Brazilians will be employed. Long-term credits and every facility for promoting trade will be granted.——"Mangue," a Brazilian plant common to all the low-lying sections of Brazil promises to become an important product for export, as it has been found by recent tests to contain 36 per cent of coloring matter suitable for manufacturing ANILINE DYES.

CHILE

On March 23 of the present year an EXPOSITION OF FRESH FRUITS and vegetables, as well as of dried and canned fruits, was opened in Santiago under the auspices of the Agronomic Society of Chile. For the purpose of aiding and encouraging this undertaking the Chilean railways have made a reduction of 50 per cent in the freight rates on commodities consigned to the exposition with the object of displaying them there. The Agronomic Society is cooperating with the fruit growers and exporters of Chile in their efforts to increase the sale of these commodities in foreign markets.——

The TREATY of amity concluded between Chile and the United States, and which was signed in Washington on July 24, 1914, was recently promulgated by the President of Chile.——Arrangements are being made by private parties in the Republic interested in AERONAUTICS to send Alfred Vidal Lira, a Chilean artisan, to Europe to complete his studies there. The young gentleman referred to showed marked ability in the study of mechanics while a student at the School of Arts and Crafts at Santiago, and constructive talent, ingenuity, and mechanical skill while studying in the Chilean Military Aviation School.——A CONGRESS OF SLAVS resident in America was held in Antofagasta during the latter part of January last. The congress established an association with permanent headquarters in Valparaiso, and provided for the publication of a newspaper which will be the official organ of the Slavs of the South American Continent.——The Chilean Senate has approved the draft of a new TRADE-MARK law. The proposed law requires compulsory registration for domestic trade-marks as well as such foreign trade-marks as may be indicated by the executive. The registration of a trade-mark gives the exclusive right to its use, but if the trade-mark is not used within three years the registration may be canceled. The registration fee is 50 pesos currency, and the registration remains valid for a period of 10 years.——An order of the Department of the Interior of the Government of Chile prescribes that the coastwise WIRELESS telegraph stations of the Republic, in cooperation with the land telegraph system, be opened to public service. The decree fixes the rates to be charged, and concedes a reduction of 50 per cent on wireless telegrams for the use of the press. The stations at Valparaiso, Antofagasta, and Punta Arenas were the first to be opened to service.——Experiments have recently been made in Santiago in the manufacture of DYES to take the place of those formerly imported from Europe. Dyes were extracted from a number of indigenous plants and the results obtained were very satisfactory. The experiments are to be continued in the hope of arriving at a successful solution of the problem.——A bill has been introduced into Congress requiring owners of houses to install a WATER service in houses situated in cities having a potable water supply.——The Chilean Yearbook for 1914, which has just been published, shows that during that year there were 1,750 INDUSTRIAL ESTABLISHMENTS in the Republic with an invested capital of 266,135,475 pesos currency. These establishments had 2,244 motors, representing 84,402 horsepower, and 9,568 machines in operation. The value of the raw material utilized amounted to 42,786,667 pesos, while that of the manufactured products was 145,731,319 pesos. The employees and workmen of these establishments numbered 39,654, and the payments for salaries and wages

aggregated 56,823,646 pesos.——Gustavo García, a Chilean architect, has submitted plans to the Department of Public Works of the Chilean Government for the proposed new building of the NATIONAL LIBRARY in Santiago.——Preliminary steps have been taken looking to the founding of an INDUSTRIAL SCHOOL at Valparaiso, with the object of training skilled artisans for service in the manufacturing industries of the country.

COLOMBIA

An executive decree has been issued CLOSING THE CUSTOM-HOUSES at Arauca and Orocue, thereby shutting out the entrance of merchandise, the most of which comes from Venezuela through these places. In future the import trade of this region will be handled through a customhouse which is to be established on the left bank of the Meta River.——A treasury order of March 1, 1916, prescribes that the PAPER CURRENCY now circulating in Colombia shall be exchanged at Government exchange offices during the next 12 months at the rate of 100 pesos paper currency for $1 gold, either in coin or in bank notes representing gold. The paper currency received in exchange for gold will be incinerated and thereby removed from circulation.——The RAILWAY from Zipaquira to Nemocon, together with the Northern Railway concession for extending the line to the Magdalena River, has been purchased by the Colombian Government for a consideration of £80,000. From press comments it would appear that great importance is attached to this purchase, since thereby the Government will be enabled to extend the Northern Railway to the Lower Magdalena River via Chinquinquira, greatly encouraging trade and manufacture in the western part of the Department of Boyaca.——A recent executive decree establishes a TRAVELING POLICE force on the Atlantic coast to work in conjunction with the customhouse guards.——The Central Board of Hygiene has requested the Government to add a completely equipped VETERINARY department to the agricultural school of the Government of Colombia, inasmuch as the services of a number of veterinary graduates are needed in different parts of the Republic to instruct cattle breeders and owners in modern methods of preventing and combating murrain and other contagious diseases to which live stock is subject.——On the 3d of March a STATUE of the Colombian patriot, Camilo Torres, was unveiled in Popayan, the place of his birth in 1766. This Colombian martyr was executed by Morillo in 1816.——The President has ordered the publication of a Government organ to represent officially the DEPARTMENT OF

FINANCE.——In February last a SOCIETY OF DENTISTS was organized at Cartagena, one of the principal objects of which is to see that existing laws and regulations relating to dentistry are observed by members of the profession.——In February of the present year a number of North American capitalists, geologists, and experienced oil prospectors passed through Cartagena on their way to the Colombian OIL FIELDS, especially to investigate the deposits in the Carare and Opon districts. There are oil-bearing lands in different parts of the country which are not at present worked because of lack of capital, insufficient transportation facilities, or for other reasons. Recent investigations show that the petroleum zones of the plains of San Martin, the Lower Medina River, and the Gaiparamo River, in the Department of Boyaca, are promising fields for the prospector and investor, as are those near Chita and Leiva, Sogamoso, and the Motilones Mountains. Samples of oils from the Lebrija and Minero Rivers, in the Paipa and the Boyaca regions, have been sent to the La Salle Institute in Bogota.——Carlos U. Benedetti has been appointed CONSUL of Colombia at Yokohama, Japan.——The Colombian consul at Amparo, Venezuela, has informed the Department of Foreign Relations that the Venezuelan Government has reduced the IMPORT DUTY ON CATTLE brought in through San Cristobal 2 pesos per head.

COSTA RICA

James G. Bennett has given the Government 3,750 colones (colon = $0.4653), the interest on which at the rate of 12 per cent per annum, is to be distributed as PRIZES to the male and female students having the highest grades who complete the course of the normal school of Costa Rica, the prizes to be divided equally among the male and female graduates. The two prizes of the first class are 100 colones each; the two prizes of the second class are 75 colones each, and the two prizes of the third class are 50 colones each.——The Executive has sanctioned a contract made by the Canton of Grecia and Alfred Gómez Zamora, for the erection by the latter of a MARKET in the town of Grecia at a cost of 27,246 colones, the work to be completed within 10 months.——According to information received from the governor of Talamanca, three PETROLEUM deposits have been found in that Province, all of which it is thought come from the same vein. These deposits are at Siruquicha, Orochica, and on the left bank of the Telive River. It is stated that the petroleum oozes from the foot of a hill, but that probably to find the true vein it would be necessary to bore to an estimated depth of 1,000 feet. One of the

difficulties in doing this would be to obtain machinery for this purpose since railway transportation is only available to the mouth of Urne River, and from thence to the Cirole Valley, where one of the deposits is located. Machinery would have to be carried on rafts or flatboats. ——An Executive decree of February 3, 1916, provides that, beginning with 1917, the OFFICIAL SCHOOLS of the Province of Guanacaste will open for instruction on the first Monday in January and will close on September 15 of the same year. The closing exercises will be in conjunction with the school festival, established under a decree of October 15, and the celebration of the anniversary of the National Independence.——Under date of February 4, 1916, a decree was issued by the President of the Republic, providing for general, normal, training, and kindergarten sections in the normal school, and fixing the age in the KINDERGARTEN section at from four to six years and the tuition at 10 colones annually.——The President has directed the Department of Public Works to have a NEW ROAD surveyed between San Ramon and Esparta, which when completed will greatly facilitate and encourage the development of the country traversed.——ARTESIAN WATER, which overflows at the surface, has been encountered near the railway station at Puntarenas in a well 83 meters deep. It is reported that borings for artesian water will be made in other parts of the country.——The parts for erecting a WIRELESS telegraph station on the cupula of the National Theater in San Jose have been assembled, and soon the capital of the Republic will be in wireless communication with Limon and Colon.

CUBA

The department of agriculture of the Cuban Government has arranged to show in Habana the Cuban FRUIT AND FLOWER EXHIBIT, together with a detailed demonstration of the manufacture of sugar, which were recently on exhibition in San Francisco. This exhibit won the first prize at the Panama-Pacific Exposition in competition with the exhibits of the State of California and with those of many other States. The display will be held on the premises of the Habana Electric Light Co., which has donated its salesrooms for that purpose.——The BUDGET of the city of Habana for 1916–17, recently submitted to the mayor, gave the estimated receipts of the municipality as $4,541,333 and the estimated expenditures as $5,095,205. This shows a deficit of $553,872. The budget was returned to the city council with the recommendation that a reduction be made in the items of expenditure. The

large increase in the estimated expenditures is due principally to the additional amounts allowed the fire and police departments of the city.——Preliminary arrangements have been made looking to the laying of a SUBMARINE TELEPHONE cable between Key West and Habana, thereby establishing communication with the city of New York and all the principal cities of the United States.——Plans have been submitted for the establishment of an ELECTRIC light and power plant at Bayamo. The municipal authorities are negotiating with two companies concerning this installation, one of which proposes to extend the service to San Felipe.——The department of agriculture of the Cuban Government has sent an agent to investigate the GUANO deposits in a number of caves of the hills of the Isle of Pines where considerable quantities of this fertilizer are known to exist. Samples will be taken of the deposits and an analysis made of the same, and if the richness and quantity of the guano available justifies it, steps will be taken to collect and place it on the market.——The first SUNDAY-SCHOOL CONVENTION of the Isle of Pines was held by the Episcopal Church at Santa Fe on the 22d and 23d of the present month.——The Government of Cuba recently refused to grant a private corporation a concession for a WIRELESS telegraph station at Cape San Antonio, and has given notice of its intention to declare forfeited a wireless concession granted to a private company on September 1, 1909. The Government now has in operation wireless stations at Pinar del Rio, Nueva Gerona, Habana, Santa Clara, Camaguey, Santiago, Guantanamo, and Baracoa, and proposes in future to make this service exclusively governmental.——A shipment of 770,000 CIGARS was recently made from Habana to London.——The health authorities of the city of Habana have issued rules requiring HOTELS to number and ventilate all rooms, forbidding the storage of merchandise in rooms used for sleeping purposes, and prescribing that walls, ceilings, floors, beds, and furniture shall be kept clean and free from insects. Guests are to be furnished with paper towels, and hotel keepers are forbidden to receive persons suffering with contagious diseases.——Steps have been taken for the purpose of organizing a Cuban company to build and operate a TRAMWAY in Manzanillo.——The STATUE of Dr. Carlos M. Finlay, the famous Cuban physician who discovered that certain kinds of mosquitoes were the sole transmitters of yellow fever, was unveiled in the patio of the department of sanitation in Habana on the 20th of the present month.——The Italian sculptor Boni, who was awarded the bid for making the Maceo MONUMENT, has been successful in bidding on the Maine monument, and therefore will receive the first prize of $1,500. The monuments to Tomas Estrada Palma, the first Cuban President, which are to be erected in Santiago de Cuba and

in Habana, will be made of white Carrara marble by Ugo Luisi & Co., Italian sculptors, at a cost of $5,000 and $25,000, respectively. A statue of Maj. Gen. Bartolomé Maso was unveiled in Manzanillo on February 24, 1916.

DOMINICAN REPUBLIC

According to official statistics the EXPORTS of the Dominican Republic during the first half of 1915 amounted to $10,395,107, the largest value ever exported from the country during the same period of any previous year. Of these exports a little over 88 per cent went to the United States.——A joint stock company entitled "Empresa de Automóviles" (Automobile Company) was recently formed at Seybo, and since January 19 of the present year an AUTOMOBILE PASSENGER SERVICE has been in operation in that city, and the result has been very satisfactory, according to reports, both to the company and the general public.——An executive decree authorized P. McDougal, owner of the URBAN TELEPHONE SYSTEM in the city of Monte Cristi, to extend his line to the rural zone of that Province, following the plan submitted to the Government and observing the rules and regulations of the telephone and telegraph law now in force in the Republic.——The Listin Diario of the city of Santo Domingo states that as soon as the National Congress appropriates the necessary funds work will be commenced on the following UNDERTAKINGS: The completion of 25 kilometers of cart roads between Santiago and Navarrete; the construction of 42 kilometers of cart roads from Navarrete to Monte Cristi, finishing in this manner the highway between Santiago and the last-named place; the completion of the macadam road to La Vega and Mocha; construction of 20 kilometers of cart road from La Vega to Santo Domingo, and the same length of road from Los Alcarrizos to La Vega, and the continuation of the cart road between Azua and San Juan, plus an additional 10 kilometers of road. This construction work, in which it is estimated that the services of 1,200 laborers will be needed, will be done under contracts awarded by competitive bids.——The President has appointed Licentiate Pedro A. Perez GOVERNOR of the Province of Seybo. Mr. Perez has filled important public posts, among which may be mentioned that of minister of justice, governor of the Province of San Pedro de Macoris, and deputy to the National Congress.——The Government has contracted for the services of a North American engineer to take charge of technical supervision of the CENTRAL DOMINICAN RAILWAY, including the permanent repair of same. For the latter

purpose $200,000 have been set aside to be used in the following manner: Between Aguita and Barrabas, $20,000; between San Marcos and La Sabana, $110,000; for the reconstruction of the Bajabonico Bridge, $20,000; for repairing the shops, $25,000; for rolling stock, $10,000; and for repairs and miscellaneous purposes, $15,000.——An organization has been effected in the city of Santo Domingo under the name of MUNICIPAL CIVIC ART SOCIETY, the object of which is to encourage the embellishment and beautification of the capital of the Republic.——Albert Nebot and José de Alvarez of Monte Cristi have organized a company for the operation of a SUGAR CENTRAL at Licey, Province of Cibao.——A law has been enacted by Congress and promulgated by the President imposing a tax of 10 per cent on the nominal value of each LOTTERY ticket offered for sale in the Republic.——At Ancon, Province of Santo Domingo, work has begun on the installation of a large STEAM SAWMILL, and a section of cart road is being built from the site of the sawmill to the Ozama Railway. Dominican newspapers strongly advocate the development of the lumber industry for domestic consumption in competition with high-priced imported lumber. The sawmill is under the management of José Schiffino.——The anniversary of the independence of the Republic was celebrated with appropriate ceremony on January 27, 1916, in the city of Santo Domingo and throughout the Republic.——On March 11 last the MIXED CLAIMS COMMISSION had registered claims amounting to $11,130,176, approximately.——An executive decree declares the lands known as "La Paja," situated in the Commune of Hato Mayor, Province of Seybo, in the angle formed by the Iguamo and Casui Rivers, to be an agricultural zone.——The Listin Diario of Santo Domingo published, on February 28 and March 1 last, the speeches made by Sr. Tulio M. Cestero and Licentiate Francisco J. Peynado during the FLORAL CELEBRATION recently held in the capital of the Republic.

ECUADOR

The principal EXPORTS from the port of Bahia de Caraquez during 1915, according to customs statistics published in El Globo were: 2,338,156 kilos of cacao, worth 1,082,596 sucres (sucre = $0.4867); 118,766 kilos of rubber, worth 181,803 sucres; 45,782 kilos of coffee, worth 17,445 sucres; 54,493 kilos of hides, worth 36,310 sucres; 343,515 kilos of unshelled ivory nuts, worth 17,737 sucres; 961,179 kilos of shelled ivory nuts, worth 81,835 sucres.——During the year 1915 the TELEGRAPH SERVICE of the Republic was increased by 152 kilometers of lines and 5 new telegraph offices.——A recent gov-

ernment decree continues in force for the present year the NATIONAL BUDGET of 1914.——An executive decree of February 23 provides that SALT intended for exportation to foreign ports shall be exported through the port of Guayaquil and that intended for inland points shall be exported through the city of Quito. The selling price has been fixed at 1 sucre 40 centavos per 46 kilograms in Guayaquil, and 3 sucres 70 centavos per 46 kilograms in Quito.——Great enthusiasm is shown in the northern Provinces of Ecuador over the proposed resumption of work on the ESMERALDA TO QUITO RAILWAY. Commissions are now studying details in connection with its construction and it is expected that work will shortly begin. A large area of rich agricultural and mineral lands hitherto inaccessible will be opened by this new road.——The city of Montecristi has sent a fine collection of WOODS common to the State of Manabi, to be placed on exhibition at the Panama Exposition.——Plans are under way for the creation of a SCHOOL OF DENTISTRY in the University of Quito. The department is to be fully equipped and rank with the other departments of the university in conferring degrees, etc.—— A POSTAGE STAMP of the denomination of 3 centavos has recently been issued on which appears a portrait of President Robles.——The Gas & Electric Light Co. of Guayaquil on March 1 raised the price of GAS for cooking and for motors to 12 centavos per cubic meter, due to the rise in coal and freight rates.

A recent executive decree authorizes Dr. Manuel Maria Sanchez, minister of public instruction, to act as minister of foreign relations during the absence on leave of Dr. Rafael H. Elizalde.——The receipts of the QUITO TO GUAYAQUIL RAILWAY for the month of January, 1916, amounted to 173,935 sucres, as compared with 159,412 sucres for the same period of 1915.——The President of Colombia has recently named Mr. Miguel Arroyo Diez, governor of Cauca, as MINISTER plenipotentiary to Ecuador.——The budget of expenses for the city PARK of Quito for the year 1916 amounts to 2,448 sucres. This amount is expended for improvements and for maintenance.—— Citizens of Ecuador residing in France have erected a HOSPITAL in Paris to aid those injured in the war. The funds for the purpose were raised by voluntary subscription among the members of the Ecuadorean colony.

GUATEMALA

On March 1, 1916, the regular session of the National Legislative Assembly was officially inaugurated in the city of Guatemala, in the presence of the diplomatic corps, the consular officers, the cabinet, the principal military officers of the army, the members of the city

council of the national capital and other distinguished visitors and government officials. The following officers were elected by the Assembly: Sr. Arturo Ubico, president; Gen. Francisco Fuentes, first vice president; Sr. J. Antonio Godoy, second vice president, and Sr. Manuel María Giron, secretary. After the election of the aforesaid officers, the secretary of foreign relations of the Government read the MESSAGE of President Manuel Estrada Cabrera, reviewing the acts of the Government during the past year. The first part of the message treats of measures which the administration adopted for the preservation of public order, and reference is made to the quiet and orderly manner in which the elections of the President of the Republic, the deputies to the National Assembly, and the judges of the supreme court of appeals were held.——The REVENUES of Guatemala during the year 1915 were 10,048,352 pesos, and the outlay 8,528,759, or an excess of receipts over expenditures of 1,519,593 pesos. The receipts of charitable institutions amounted to 5,458,819 pesos, and the expenditures aggregated 5,236,700, which left a credit balance at the close of the past year of 221,619 pesos.——The registry of REAL PROPERTY shows the following transactions in 1915: Sales and gifts, 11,963,125 pesos; mortgages made, 182,865,859, and mortgages cancelled, 136,200,870, or a total of 331,029,854.——The HARVESTS of 1915 show a year of abundant crops and the following yields of principal products: 990,000 quintals of coffee; 8,217,000 bunches of bananas; 850,000 quintals of brown and raw sugar; 180,000 quintals of beans; 270,000 quintals of wheat, and 223,000 quintals of other agricultural products.——Recent official figures show that there were in 1915, 1,470,200 head of HORNED CATTLE in the Republic, which is a considerable increase over 1914. During the past year there were slaughtered in Guatemala 95,023 beeves, 16,680 sheep, and 76,860 hogs, representing values, respectively, of 59,215,094 pesos, 1,284,282, and 16,195,461 pesos.——The consumption of domestic FLOUR in Guatemala in 1915 aggregated 49,208 quintals valued at 8,603,233 pesos, and of imported flour 133,492 quintals valued at 26,169,952 pesos.——The year 1915 was a prosperous one in the MINING industry of the country, and new mines were denounced to the number of 59. The Huehuetenango zone of lead ores produced a sufficient quantity of this metal to supply the needs of the country during the past year. The exports during the year of mineral of all kinds consisted of 1,001,458 pounds.——In 1915 the number of persons entering the country through the ports of the Republic was 19,114, as compared with 14,396 departures.——During the past year there were 92 PUBLIC BUILDINGS erected in Guatemala, 12 towns were furnished with a potable water supply, and 69 bridges were built.——The AUTOMOBILE ROADS between the cities of Guatemala,

Antigua, and Quezaltenango were repaired in 1915 over a distance of 10,129 meters, and 12,304 pesos were expended in improving the Pancapjche to Tucuru highway.——The President mentions in his message that Guatemalan COFFEE, bananas, cacao and rubber were awarded first prizes at the San Francisco Exposition in competition with the products of other nations, and that articles in the Guatemalan exhibit were given 32 medals of honor, 69 gold medals, 88 bronze medals, 327 honorable mentions, and numerous diplomas.

HAITI

The Secretary of Public Instruction has recommended that school inspectors representing the Government make GYMNASTICS and school games obligatory features of school instruction.——A NEW PUBLICATION entitled "Le Temps" is being issued at Port au Prince under the direction of V. Touissaint Noel.——The cornerstone of the new San Pablo CHURCH, erected on the site of the former structure of that name, was laid on February 6, 1916.——Preliminary steps have been taken for the construction of a BRIDGE at Vois Verna and Turgeau Avenues in the National Capital.——Under an order of the secretary of public instruction the HOSPITAL of San Vicente de Paul in Port au Prince has been annexed to the San Alexis military hospital of the School of Medicine.——The municipality of Port au Prince, under the name of VICTORIA PLAISANCE AVENUE, has just opened a beautiful highway to public traffic.——Recently the municipality of the National Capital has undertaken extensive improvements at Port au Prince, including the SANITATION of the city and the construction of a wharf.——A new modern THEATER of artistic appearance is being erected on "l'Egalite" Street in the National Capital.——The BAND at the National Palace in Port au Prince will in future consist of 52 musicians, made up of 18 soloists, 16 first and 16 second class musicians, and a director and an assistant director.——A recent order of the President of the Republic abolishes MILITARY HOSPITALS, with the exception of the one at Port au Prince, as well as the military barracks which were formerly maintained at the capitals of the different communes of the Republic.——A cart road is being constructed through the beautiful San Martin woods to Petionville, and reports are current that an ELECTRIC TRAMWAY is soon to be built to that place.——Dr. Leon Audain has been appointed secretary of public instruction and the former secretary, Louis Borno, has been given the portfolio of public works.——Mr. Solon Menos, minister of Haiti in Washington, has formally communicated to his

Government the ratification by the Senate of the United States, on February 28 last, of the CONVENTION signed in Port au Prince on November 11, 1915.—In future the DIPLOMATIC REPRESENTATIVES of the Republic of Haiti will consist of three ministers, stationed at Washington, Paris, and Santo Domingo.——The President of the Republic has appointed the following CONSULS: Fernand Hibbert, consul general at Habana, Cuba; Th. Romain, consul general at Amsterdam and Antwerp; Emil Marcelin, consul at Mobile, Ala.; M. F. S. Lissede, consul general at Hamburg; M. E. Nazon, consul at Santiago de Cuba; M. T. A. Vilmeney, consul general at Kingston, Jamaica; and Amilcar Duval, consul general in Italy.—— On February 18 last a COMMITTEE ON HYGIENE was appointed at Port au Prince to report upon the general health conditions of the country, make recommendations and reports concerning public sanitation and health, prepare rules and regulations and superintend the enforcement of same, make estimates of sanitary works to be submitted to the State and municipal authorities, and do such other work as may be deemed expedient for the country along lines of sanitation and hygiene. The committee is composed of the following members: Dr. W. Menos, director of the National School of Medicine and Pharmacy; Drs. Hyson, Ricot, Lissade, and Mathon of the bacteriological laboratory; Dr. Lebrun Bruno, director of the bureau of hygiene; and Dr. Fleury, port physician at Port au Prince.

HONDURAS

A law of the National Congress of January 8, 1916, formally declares the election of Drs. Francisco Bertrand and Alfredo Membreño PRESIDENT AND VICE PRESIDENT, respectively, of the Republic for the statutory period of 1916 to 1920. The same law confirms the election of justices and associate justices of the SUPREME COURT for the presidential term referred to. These officials are as follows: Justices—Francisco Escobar, Leandro Valladares, Pedro A. Medal, Rómulo E. Durón, and Silverio Laínez. Associate Justices—J. Daniel Boquín, Presentación Quesada, and Emilio Mazier. All of these judges took the oath of office on February 1 last.——President Bertrand has appointed the following CABINET: Dr. Alberto Membreño, department of fomento (Promotion); Dr. Jerónimo J. Reina, department of war and marine; Gen. Leopoldo Córdova, department of the treasury; Dr. Francisco J. Mejía, department of home government (Gobernación) and justice; and Dr. Silverio Laínez, department of public instruction.——Congress has enacted a law providing for the establishment of Port Herrera as a FREE PORT of the Republic for the storage of merchandise. This

port, which will be located at the point where the Cruta River empties into the Caratasca Lake, will be free, under this law, for a period of 10 years. The port is named in honor of Dionisio de Herrera, a Honduran patriot and first President of the Republic.——The President of the Republic, bearing in mind a legislative decree of February 22, 1909, which imposes a tax of 15 per cent on exports of domestic or foreign coins 900 thousandths fine, has decreed that SILVER BARS made from melted coin shall pay an export duty of 15 per cent ad valorem, computed at the rate of 18.40 pesos per pound of bullion. Silver bullion produced in any other manner than by melting down coin is not subject to this duty. In order to export silver bullion from Honduras the exporters must accompany the shipment with a way bill or written permit issued by the collector of revenue of the department from whence the bullion comes. The decree is intended to discourage the custom of melting silver coin and shipping the product out as silver bullion, thereby avoiding the payment of the export duty on silver coin.——Len Cooper & Bros. have obtained a concession from the Honduran Congress to establish at Oak Ridge, near Roatán, a factory for the manufacture of different kinds of SOAP, with permission to import free of duty for a period of five years all the material and supplies needed by them in the manufacture of soap. The factory proposes to utilize in the manufacture of its products coconut oil obtained from coconuts grown in the Bahia Islands. These coconuts were formerly shipped abroad, but owing to the European war and the difficulties of transportation the demand has fallen off, thereby leaving large numbers of coconuts in the country from which to manufacture coconut oil. Some time ago a company was organized in Honduras to extract this oil, and it is probable that the factory referred to will now be able to obtain an abundant supply for use in the manufacture of fine grades of soap.——A recent executive decree prescribes that requests for SCHOLARSHIPS in the institutions of learning of the country shall be made by persons possessing the proper qualifications within 15 days after the first month of vacations of each school year.——The President has promulgated a law amending certain articles of the CODE OF PUBLIC INSTRUCTION and fixing dates for the opening of schools and the times for holding examinations therein.

MEXICO

The governor of the State of Veracruz has established COLONIES FOR WORKMEN at Orizaba and Jalapa, with the special view of benefiting artisans and other workmen employed in factories located in the cities referred to.——The military governor of the State of

Yucatan has issued a decree prohibiting foreigners from acquiring REAL PROPERTY or easements therein in the Commonwealth of Yucatan. Contracts with foreigners concerning lands, made after the issuance of the decree, are void. The decree is a temporary measure and is not to be repealed until the circumstances which caused its issuance disappear.——A decree of the governor of the Federal District, dated January 14, 1916, forbids the sale of PULQUE, the fermented juice of the century or maguey plant, an intoxicating beverage which is consumed in great quantities in the City of Mexico, in the Federal District. Violators of the decree are liable to a penalty of three months' imprisonment. Maguey plantations in the Federal District are prohibited from engaging in the manufacture of this beverage, and persons making the same are liable to arrest and imprisonment. Official inspectors have been sent out by the district government to see that the provisions of the law are complied with.——The governor of the State of Tamaulipas has extended the time in which to submit ASSESSMENT REPORTS covering the taxable property of that State until May 23, 1916.——Late reports from San Luis Potosi indicate that the MINES AND SMELTER at Matehuala, a mining center of the State of San Luis Potosi, are in full operation, and that more than 600 laborers are daily employed in this work earning wages of from $1.50 to $2, silver, per day, or the equivalent of from 14 to 18 pesos paper currency. It is stated that the silver pesos at present in circulation in Matehuala were brought by the American Smelting & Refining Co. from China. Outside of the mines and smelter, paper money is the circulating medium.——The Department of Fomento, Colonization, and Industry of the Mexican Government commenced, on January 1 of the present year, the issue of a fortnightly publication entitled the BOLETÍN MINERO (Mining Bulletin), which will be the official organ of the mining and petroleum interests of the Republic. The first number of this important bulletin contains numerous circulars of the Federal and State governments relating to mining in Mexico, rules and regulations concerning the policing of mines, and an article on the Queretaro opal fields.——Col. Alberto Salinas, director general of the Government aeroplane factory, has built the first complete AEROPLANE ever constructed in the country. According to press reports the Government aviation school will soon have a number of graduate students ready to operate flying machines.——Three of the large COTTON FACTORIES at Monterey, State of Nuevo Leon, recently raised the wages of all their factory hands, and made arrangements to furnish groceries and other necessaries to them at the lowest market prices.——The governor of the State of Veracruz has issued a decree providing for the settlement of LABOR DISPUTES by conciliation and arbitration boards.——The railway union of Yucatan has petitioned the governor of that State to establish at the

headquarters of the union in Merida a SCHOOL FOR WORKMEN.——A BANK entitled "Banco Escolar" (School Children's Bank) has been established, under the direction of the department of public instruction, in the city of Puebla, State of the same name.

NICARAGUA

Children's Park, in the city of Managua, will hereafter be known as DARIO PARK, in which the municipality and citizens of Managua will erect a bronze STATUE in memory of the celebrated Nicaraguan poet Ruben Dario, who died at Leon on February 6.——On March 1, 1916, the Bluefields Fruit & Steamship Co. put into effect a new freight schedule materially increasing the FREIGHT RATES to New Orleans, La. This was due to higher rates charged for chartering vessels.——It is announced that two boats are soon to enter the coastwise trade from Cape Gracias to Port Limon and Colon, making regular round trips bimonthly. This regular STEAMBOAT SERVICE will greatly facilitate convenience in coastwise travel.—— An expert mining engineer has recently visited and made extensive examinations in the MINES of the Eden Mining Co. This company at present employs 450 men, has a capital of $3,000,000, and mining operations on a large scale and development work in the Pis-Pis district is looked for in the near future.——The schooner *Bluefields*, a sailing vessel, recently made the TRIP from Pensacola, Fla., to Bluefields in less than nine days. After unloading 180,000 feet of finished lumber and building material, it proceeded to Schooner Cay, where it took on a cargo of 200,000 feet of mahogany and cedar boards consigned to Philadelphia. The steamer *Gansfjord* cleared from Bluefields on February 15 with 26,500 bunches of bananas for New Orleans.——A new RAILROAD is shortly to be built from Chinandega to Mony Point, in the Gulf of Fonseca. The new port will have a wharf that can accommodate vessels of considerable draft. The Grace Co. will send its large vessels direct to Mony Point and from there its freight will be carried to the other Central American ports in small vessels.——Congress was reconvened in EXTRA SESSION on March 15.——Congress has selected Senator Salvador Cardenal and Deputy Miguel Cardenas as first and second DESIGNATES, respectively, for the Presidency of the Republic.——The Chamber of Deputies has recently promulgated a law making the issuing of MERCHANDISE COUPONS illegal. Laborers are not to receive in payment of their services coupons or other equivalents for money of legal currency.——By Executive decree of March 3 the jurisdiction of the DISTRICT OF PIS-PIS was annexed to the Department of Bluefields.——The National Congress has ratified the contract between

the Government and the Nicaragua Sugar Estates (Ltd.), whereby the company agrees to make on San Antonio estate, which it has established in the Department of Chinandega, a new SUGAR CANE PLANTATION of 1,700 acres in extent, equal to that at present existing.——The Post Office Department has issued a circular prohibiting the SENDING OF MONEY in ordinary or registered letters without declaring the amount, as otherwise it can not be held responsible.——The National Bank has recently been selling an average of $2.000 worth of drafts per day for NEW YORK EXCHANGE.——Surveys have been completed for extending TITLES OF LAND to Moskito Indians in the Karawalla, Sandy Bay, and La Cruz sections.

PANAMA

The Official Gazette of January 24, 1916, publishes the full text of an ARBITRATION CONVENTION concluded between Panama and the United States. The High Contracting Parties agreed to submit to his Excellency, W. L. F. C. de Rappard, minister of Holland, near the Governments of the countries in interest, the fixing of the damages which are to be paid on account of the death and injury to American citizens resulting from the quarrel which took place at Cocoa Grove in the city of Panama on July 4, 1912.——Dr. Eusebio A. Morales, minister of Panama in Washington, has been appointed delegate of Panama to the INTERNATIONAL HIGH COMMISSION, which will meet during April in Buenos Aires.——At the request of the chargé d'affaires of Cuba in Panama the President has exempted CIGARETTES imported from the island of Cuba from the additional duty of 20 per cent imposed upon this class of merchandise by a decree of November 12, 1915.——A recent executive decree declares that the zone set aside for an INDIAN RESERVE in the district of Bastimentos shall not be used for that purpose.——A decision of the Department of Home Affairs (Gobierno) and Justice recognizes the Cosmopolitan Club of the city of Panama as a juridic entity.——Tulio Serband, a civil engineer, has completed plans for a SUSPENSION BRIDGE over the San Pablo River at Soná, Province of Veraguas. Construction work is to be begun in a short time.——The Panama press announces that CONCRETE BUILDINGS for storing inflammable substances which are being erected at "Huerta del Rey," in the suburbs of the city of Panama, under the direction of George F. Novey, a civil engineer, will soon be completed.——On February 13, 1916, the FINE ARTS BUILDING of the National Exposition of Panama, the galleries of which are under the immediate direction of Robert Lewis and Francisco Vallarino, was opened to the public. The Diario de Panama states

that the paintings on exhibition there are solely those of Panaman artists and of a few foreign painters who have long resided in the country, and adds that the appearance of the main gallery is very pleasing, the paintings having been arranged tastefully and in an artistic manner.——Newspaper reports state that a town is being built in Gatun Valley whose founders and present inhabitants, representing about 300 families, are agriculturists from the English West Indies. These colonists came to Panama during the construction of the canal, and now that their services are not needed by the canal commission, they have not returned to their homes but have preferred to found a colony in a healthful and fertile section of country along the shores of Gatun Lake, on land belonging to Panama. They have christened the settlement NEW PROVIDENCE.——An executive decree of February 11 last divides the Republic into three sections for the manufacture, sale, administration, and collection of the revenues on LIQUORS. The inspectors of these sections or their representatives are authorized to grant licenses for the operation of stills.——The Official Gazette of Panama of January 31, 1915, contains the full text of the PARCEL POST CONVENTION concluded between the Republics of Panama and Venezuela.——An ELECTRIC light plant was recently installed in the city of Las Tablas, and the park which is being laid out there will soon be ready for the use of the public.

PARAGUAY

According to official data of the Government of Paraguay the FOREIGN COMMERCE of that country during the first 11 months of 1915 amounted to 7,216,385 pesos gold (gold peso= $0.9648), made up of imports, 2,074,901, and exports, 5,141,394 or an excess of exports over imports of 3,066,493. Exports were made to the following countries in the order of their value: Argentina, 3,281,179 gold pesos; Uruguay, 558,800; Holland, 500,930; United States, 281,208; Great Britain, 179,118; Spain, 65,491; France, 63,652; Denmark, 58,206; Norway, 55,491; Italy, 44,583; Switzerland, 24,056; Brazil, 19,250, and other countries, 9,430. In the value of the imports Argentina also occupied the first place, Great Britain second, and the United States third.——A law has been enacted imposing an EXPORT DUTY on dry and salted hides amounting to 1.50 gold pesos each, plus a surcharge of 10 centavos gold each. The same law raises the export duty on tannin to 10 gold pesos per ton, and provides that Paraguayan tea shall pay 6 centavos gold on each 10 kilos exported.——The Commercial Review of Asuncion states that a factory for the manufacture of CERAMICS

will soon be established at Aparipy, district of Tobati, and that the kaolin deposits of that place have been acquired by persons interested in the enterprise. The white clay of these deposits is to be used in the manufacture of porcelain wares, while the ordinary clay will be utilized in making ordinary tiles for drainage and glazed tiles for paving and building purposes and other similar uses. The factory proposes to build a tramway from the clay deposits to Villeta, via Tobati, Caacupe, and Pirayu.——During the last two years the Agricultural Bank of Asuncion has urged upon farmers and plantation owners the advisability of increasing the extent of their cultivations of food-producing crops, and the result has been a notable increase in the quantity of sugar and rice harvested in the country and a considerable falling off in the quantity and value of the imports of these articles. During this period the sugar plantations have exported about 600,000 kilos of their products, while the rice fields have been greatly extended in area and number with a resultant additional yield. It is estimated that the Central zone of the Republic produces at the present time sufficient food products to meet the wants of the country, and that the increased production of sugar and rice has saved imports annually of these articles to the value of 450,000 gold pesos.——According to Dr. Bertoni the upper Parana region of Paraguay is well suited to the cultivation of CACAO, since the conditions of soil, moisture, and air circulation are ideally found there. The species recommended for planting is the Heliocarpus Americanus.——The SCHOOL OF COMMERCE at Asuncion will receive in 1916 a subvention from the Paraguayan Government amounting to 125 gold pesos per month. The school is the most important of its kind in the Republic, and is held in such high esteem by large business interests that the Mercantile Bank of Asuncion contributed to its support in 1915 5,000 pesos currency, and during the present year the Paraguay Sugar Co. has made a donation to this school of 3,000 pesos currency. The school is under the direction of Dr. Alfonso Campos.——The Congress of Paraguay has enacted a MORATORIUM law which will be in force until December 31, 1917.

PERU

An Executive decree of January 20 last makes instruction in the PRIMARY BRANCHES OF EDUCATION obligatory on persons belonging to the army and navy. It is the intention of the authorities that everyone who leaves the service or remains in the military department of the Government will have a practical knowledge of reading, writing, and arithmetic.——The branch of the Commercial

Bank of Spanish America (Ltd.) at Iquitos has been authorized by the National Government to issue PROVISIONAL CHECKS OR NOTES in denominations of from £1 to £10 each, up to an amount not exceeding £12,000. These checks or notes will bear the seal and signatures of the representatives of the bank, the seal of the office of the prefect, and the rubric of the prefect of the Department of Loreto. This issue of checks or notes will be guaranteed by a deposit of £12,000 Peruvian gold made by the Bank of Peru and London, and will be legal tender in the offices of the Government for the payment of taxes and other dues. This issue of checks or notes is to be retired from circulation six months after it is made.——In accordance with the provisions of law No. 2187, the Executive power has decreed that shippers of PETROLEUM and by-products thereof, when these commodities are intended for consumption in the Republic, shall obtain for each shipment an exportation waybill and give bond for the amount of the export duties prescribed by law. This waybill must bear the signature of the Government commissioner at Talara and must be delivered to the customs officials at the port of destination, and when the shipment is unloaded and that fact certified to on the waybill by the customs officials, the bond given as a guaranty of the payment of export duties in case the shipment should leave the country, will be canceled or returned to the party in interest in exchange for the waybill.——About the middle of January last the President of the Republic addressed a message to Congress asking for authority to negotiate a LOAN, not exceeding $15,000,000, in the United States, the bonds to draw 6 per cent interest per annum, to be issued at the rate of 88 per cent of their nominal value, and an accumulative sinking fund of 8 per cent per annum to be provided for their retirement.——A committee has been appointed by the President of the Republic to determine the amount of the INTERNAL PUBLIC DEBT and to classify and index the same.——The Government has accepted a bid for the construction of a MOUNTAIN HIGHWAY between Urcos station on the Juliaca to Cuzco Railway to some navigable point on the Madre de Dios River. The builders of this road are to be given 1,000 hectares of mountain lands in the Department of Madre de Dios for each kilometer of road constructed.——A law has been enacted by Congress and promulgated by the President of the Republic continuing in force during 1916 the law which increases the TAXES ON PERSONAL PROPERTY 6 per cent, and 7 per cent on licenses in Lima and Callao.——The President has promulgated a number of laws recently enacted by Congress, among which is one requiring that 1 per cent of the general customs revenues of the port of Callao be applied to a BUILDING FUND for the completion of the municipal hall in Lima, the monument of San Martin, the pavement of the streets of the capital, and the completion of the legislative palace.

SALVADOR

According to the MESSAGE which President Carlos Meléndez delivered to the National Assembly in the city of San Salvador on February 18 last, at the beginning of 1915 there were 875 PRIMARY SCHOOLS in the Republic, 731 of which were State institutions, 73 municipal, 63 private, and 9 charitable. The total matriculation is given as 49,377, and the average attendance 33,436. Of these pupils 42,125 were matriculated in the State schools, which institutions had an average attendance of 27,499. Thirteen additional primary schools were added to the system in 1915, and so far, during the present year, three more primary schools have been started.——The REVENUES of the Government of Salvador in 1915 from customs duties and other taxes amounted to 10,625,173 pesos (peso = $0.3537), made up of the following items: Customs duties on imports, 4,247,678; customs duties on exports, 1,753,800; tax on liquors, 2,553,730; sealed paper and stamps, 401,109, and sundry revenues, 1,668,856. The Government EXPENDITURES in 1915 amounted to 13,200,331 pesos for account of the following items: National Assembly, 99,064; executive office, 104,609; department of interior (gobernación), 2,462,780; fomento (promotion), 1,289,700; public instruction, 1,071,333; foreign relations, 199,021; justice, 742,254; charity, 651,812; treasury, 818,199; war, 3,607,829; agriculture, 124,661, and department of public credit, 2,029,069. The deficit was met by an increase in the public debt.——The city of San Salvador has ordered the telegraph and TELEPHONE WIRES within the limits of the municipality to be placed underground.——In 1915 there were 127,299 persons VACCINATED in the Republic. At the present time there is no smallpox in the country.——During the past year the Government expended in PUBLIC WORKS sums aggregating 362,218 pesos.——In 1915 the Central Board of Agriculture, in cooperation with the Government, imported 45,382 quintals of CORN and 2,883 quintals of beans (quintal = 101.44 pounds).——The road which is being built by the Orient RAILWAY Co. from La Union, on the Gulf of Fonseca, via San Miguel and Zacatecoluca, to San Salvador, from which point it will be extended through Santa Ana to Zacapa, on the Guatemalan frontier, is completed over a distance of about 200 miles. This leaves a gap of about 91 miles to be constructed before the line will be connected with the capital of the Republic. The contract has been let to René Kilhauer and the actual work of construction is being done under the direction of J. Ross, an experienced railway construction engineer. When this line is completed and put in operation, the time from Salvador to Puerto Barrios will be reduced to 20 hours, and a journey can be made from the city of Salvador to New Orleans in six days. Under

an arrangement made between the Governments of Salvador and Honduras, it is proposed to extend this railway around the Honduran part of the Gulf of Fonseca for the purpose of connecting it with the Corinto, Nicaragua, to Managua railway.——The new AQUEDUCT of the city of San Miguel is capable of furnishing daily 100 liters of water per person to a population not in excess of 35,000. The old aqueduct will be repaired and continued in use.——The city of San Miguel proposes to install a modern system of SEWERS.——The Divisadero and Hormiguero gold and silver MINES are being worked with the most up-to-date machinery and are producing considerable quantities of gold and silver ores.——Installations are being made so that the towns of Zacatecoluca, San Vicente, and Cojutepeque may be furnished with ELECTRIC light and power from the Chorreon hydroelectric plant belonging to R. Segura.——The BOARD OF TRADE of the city of San Salvador was recently organized in the national capital for the purpose of encouraging and developing commerce with the Republics of Central America and foreign nations. The president of the organization is C. Velada and the secretary Jorge Harrison.

URUGUAY

On January 14 last a law was promulgated by the President of the Republic requiring ABSENTEE OWNERS OF REAL PROPERTY to pay double the rate of taxation levied upon resident landlords. The law also applies to owners of real property domiciled in the country but absent therefrom for more than a year from the time taxes fall due. Foreign industrial and commercial companies doing business in the country under concessions granted them by the Government are exempt from this additional tax, as are also persons engaged in the diplomatic and consular service of the Republic and those who are studying abroad at the expense of the State. Certain other local exemptions are made covering real property owned in some of the watering places of the country. The director general of taxes is empowered to settle disputes concerning the application of the law. Persons liable to the payment of this tax and who do not liquidate same when due are subject to a fine of 20 per cent additional. Under this act banks and other corporations are required to send a report in February of each year covering real property under their control belonging to absentee owners.——The secretary of the department of industries recently inaugurated the new retort house of the MONTEVIDEO GAS CO. These gas works are fitted up with the most modern machinery and labor-saving appliances, the furnaces being charged and discharged automatically. The first gas works were established in Montevideo in 1853. These were remodeled, enlarged, and improved in 1863, and were again enlarged in 1872.

In addition to gas the present gas works produce coke, tar, pitch, tar oil, liquid ammonia, and some other by-products.——A loan has been negotiated with the Bank of the Republic for 200,000 pesos (peso = $1.0342), the proceeds of which are to be used in continuing the construction work of the TABLADA RAILWAY, the estimated cost of which is 400,000 pesos. The line will run from Sayago Station to the Tablada ranch. The construction work is under the direction of the engineering department of the Central Railway of Uruguay.——A CONGRESS OF RURAL NEWSPAPERS will be held in San Jose in April of the present year. A program has been prepared and arrangements made for a complete discussion, during the sessions of the congress, of matters tending to further the interests of the rural newspapers of the Republic.——The NATIONAL WHEAT EXPOSITION, which was inaugurated at Canelones on March 26, 1916, is scheduled to close on April 2. One of the most interesting features of the exposition was a demonstration of the thrashing of wheat and a comparison of old with new methods.——A CONGRESS OF LYCEUM DIRECTORS was held in Montevideo on February 14 last.——A number of designs for minting the NEW SILVER COINS which are to be placed in circulation in Uruguay, have been submitted by the Department of Finance to the President of the Republic.——A BRITISH CHAMBER OF COMMERCE has been established at Montevideo. The only other organization of this kind in South America is at Buenos Aires.——The Congress of Uruguay recently appropriated 15,000 pesos for the use of the Montevideo ATHENÆUM.——The SCHOOL OF COMMERCE of the Government of Uruguay in Montevideo, the regular course of which covers four years, has added another year for additional or post-graduate work. The object of the school is to prepare experts in commercial, maritime, and civil law, consular and tariff legislation, linear and industrial drawing, commercial geography, finance and statistics, languages, stenography and typewriting, and mercantile and administrative accounting.

VENEZUELA

"El Universal," an important daily newspaper of Caracas, recently published a list of the principal INDUSTRIAL COMPANIES doing business in the Republic with Venezuelan and foreign capital from 1908 to 1916. There are 55 of these companies representing an aggregate investment of 138,361,125 bolívares (1 bolívar = $0.193), the principal of which, in the order of their capitalization, are as follows: Venezuelan Sugar Co., 20,800,000 bolívares; West India Oil Co., 15,600,000; Union Cigar Manufacturing Co., 12,500,000; Zulia Sugar Central, 6,000,000; Venezuelan Fluvial and Coastwise Navigation Co., 6,000,000; and the Previsora Insurance Co., 6,000,000 bolívares.

The Pan American Iron Corporation, The Canadian Venezuelan Co., and the Caribbean Petroleum Co. each have a capital of 5,200,000 bolívares.——The practical school of NAVAL CONSTRUCTION and mechanics, established under an executive order of January 3, 1916, at the National Dry Docks in Puerto Cabello, opened its courses on February 21 last, although the official inauguration of the school will not be held until April 19 of the present year.——According to press reports the cultivation of COTTON in the Tachira district gave an excellent grade of strong, white cotton which ginned 30 per cent of clean cotton. When a larger area of cotton is under cultivation in that vicinity, modern gins will doubtless be erected in sufficient numbers to insure the proper handling of the entire crop. At Maracaibo where the soil and climate are less favorable for growing cotton than at Tachira, it is being successfully cultivated, and the present year's yield is estimated at 40,000 quintals, not a bad showing when it is considered that the growing of cotton was begun in Maracaibo less than five years ago.——A MONUMENT in honor of Baltazar Vallenilla Lanz, a distinguished Venezuelan scholar and statesman, made in Paris by the Venezuelan sculptor, Lorenzo Gonzalez, is to be brought to and erected in Caracas as soon as arrangements can be made for its transportation.——On February 10 last the SIMON BOLÍVAR LYCEUM was opened to service at San Cristobal, State of Tachira, in the presence of the governor of that State and a distinguished assembly of invited guests.——According to data published by the department of statistics, the POPULATION of the principal cities of the Republic on June 30, 1915, was as follows: Caracas, 86,798; Barcelona, 17,101; San Fernando, 8,327; La Victoria, 17,812; Ciudad Bolivar, 21,595; Valencia, 64,861; San Carlos, 12,309; Coro, 12,327; Calabozo, 9,832; Barquisimento, 32,776; Merida, 16,512; Ocumare del Tuy, 9,431; Maturin, 18,966; Asuncion, 3,959; Guanare, 10,900; Cumana, 14,390; San Cristobal, 20,759; Trujillo, 12,884; San Felipe, 12,988; Barinas, 6,499; and Maracaibo, 48,490.——On January 23 last an AUTOMOBILE service was established between the towns of Tumeremo and Ciudad Bolivar, a distance of 395 kilometers, 32 hours' time being required in which to make the journey.——The newspaper called "Panorama" and the bookstore and publishing house of Belloso Rosell Bros. of Maracaibo have offered a prize of 2,000 bolívares for the best addition to the work entitled "Historical Notes of Venezuela by Baralt and Diaz," special attention to be given to notes on the lake and city of Maracaibo, the manuscript to be submitted by January 1, 1917. A prize of 200 bolívares is also offered for the best lyric-epic poem submitted before May 1 of the present year on a subject to be selected by its author. A jury of six well-known writers will meet in New York and render a decision.

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APRIL · · · · · · · 1916

BULLETIN OF THE PAN AMERICAN UNION

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Office of Legation, 1737 H Street, Washington, D. C.

[1]Absent.

SR. DR. FRANCISCO BERTRAND,

President of the Republic of Honduras.

At the election at the end of the past year, Dr. Bertrand was elected President of the Republic for the next period of four years, 1916–1920.

BULLETIN
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WORK OF THE INTERNATIONAL HIGH COMMISSION AT BUENOS AIRES.

THE International High Commission which met in Buenos Aires for the purpose of creating stronger and closer financial and commercial relations among the republics of the Western Hemisphere, perfected the following permanent organization: William G. McAdoo, Secretary of the United States Treasury, was elected president of the commission; Prof. John Bassett Moore, of Columbia University, New York, vice president; and Dr. L. S. Rowe, of the University of Pennsylvania, secretary general.

Permanent headquarters of the commission will be established in Washington. The commission is composed of nine members from each of the American Republics, the Secretary of the Treasury or minister of finance acting as chairman of the respective sections, and the creation of a permanent organization was regarded by the delegates from every country represented at the conference as a distinct step toward the realization of a greater and wider Pan Americanism.

According to advices received by the Pan American Union, the delegates to the conference are enthusiastic over the important results accomplished and the bright prospects for the future. The meeting has greatly strengthened Pan American progress and sentiment. Subjects of vital concern to every American Republic have been considered by the conference, which has crystallized its conclusions in resolutions which will be submitted to the participating governments. These resolutions reveal the obstacles which retard the development of Pan American finance and trade, and point out the remedies.

The commission adopted resolutions declaring the creation of an American merchant marine to be of paramount importance. Strong sentiment developed at the meeting in favor of cooperation between the leading South American Governments and the United States to secure results. Delegates from Argentina, Brazil, and Chile drew particular attention to the seriousness of the transportation problem.

Minister of Finance Calogeras, of Brazil, declared that Brazil strongly supports the efforts of the United States to solve this pressing problem. Speakers at the meeting declared that Latin America looked to the United States to meet the situation and the belief was expressed that full development of inter-American relations was impossible without an adequate American merchant marine.

As a Pan American unit of money of account the conference adopted the franc of 0.33437 gramme gold 900 fine, which is exactly one-fifth of the value of the United States gold dollar. This is regarded as of fundamental importance, because it creates an established basis which ultimately, like the Latin Union of Europe, will provide interchangeability of gold coins among all American republics, as each country becomes prepared to establish its gold circulation unit. This new Pan American unit was recommended by the conference for uniform use in connection with custom statistics.

The conference urged the completion of an intercontinental railway system, and the improvement of telegraph and cable facilities in order to bring the American republics into the closer union which their community of interest invites.

Absolute government control of all wireless communication was recommended by the conference. It was realized that a most desirable step in the promotion of closer financial and trade relations was the creation of freer and cheaper means of communication. For this reason it was pointed out that it was most important to improve telegraph and cable facilities.

It was proposed that an early conference of wireless experts be held at Washington and that all countries represented at the Buenos Aires meeting take steps to coordinate the development of the science of wireless telegraphy.

All of the many reservations made by various countries in the Hague Convention in 1912 in connection with the adoption of a uniform law for bills of exchange were unified and agreed upon at Buenos Aires with one exception. This brings the proposed uniformity of law regarding bills of exchange nearer to realization than ever before.

Recommendations for clarifying international conventions on trade-marks and copyrights were also adopted by the commission.

The commission unanimously approved the arbitration plan negotiated between business men of the United States, through the instrumentality of the Chamber of Commerce of the United States, and Argentina, and recommended similar agreements in other countries of the Western Hemisphere. Uruguay gave notice of its intention to sign an agreement of this character immediately, and the commission suggested the study of arbitration plans between Governments and corporations in other countries.

Photo by Underwood & Underwood.

HON. ROBERT LANSING

Secretary of State of the United States. This photograph was taken at the end of March of this year.

The commission unanimously approved revision of laws relating to commercial travelers and samples which would unify and reduce travelers' taxes; approved a system of tariff statistics based on uniform classification; and recommended the simplification of port charges and consular fees.

The conference approved the results of the Postal Congress held in Montevideo in 1911, and urged that a new postal conference bringing in countries which are not now a part of the South American Postal Union be held. It was recommended that postal rates be reduced.

The Argentine Republic has accorded unusual honors to Secretary McAdoo and the other members of the United States delegation. The President of the Republic gave a dinner in his honor, and a farewell banquet was given to the visitors at which the minister of foreign affairs made an address. Senator Fletcher, of the United States section, was chosen by all the delegates to the conference to make the response to the minister on their behalf.

RESIGNATION OF SR. DON EDUARDO SUAREZ-MUJICA, THE CHILEAN AMBASSADOR TO THE UNITED STATES.

At the last meeting of the Governing Board a letter was read from the Chilean ambassador, Sr. Don Eduardo Suarez-Mujica, announcing his resignation as ambassador and the consequent severance of his connection with the Governing Board. The Secretary of State of the United States, as chairman ex officio of the board, was requested by the unanimous vote of those present to duly address a proper acknowledgment of the letter of the ambassador, expressing appreciation of his services as a member of the board and his devotion to the work of the Pan American Union and the cause of Pan Americanism, together with sincere regret that he is to be no longer a member of the board.

The Director General also wishes to take advantage of this opportunity to state on behalf of himself, the Assistant Director, and the other members of the staff of the office their regret that they are no longer to have the official cooperation and advice of the Chilean ambassador in the direction of the affairs of this organization. Sr. Suarez-Mujica always took the keenest interest in every detail of the administration of the Pan American Union and was ever ready to give counsel to the Director and the Assistant Director when required. He was particularly interested in the establishment of the educational section and acted as chairman of the committee which prepared the resolution providing for its establishment. Wherever he may now go and whatever may be his activities, it is hoped by the executive officers and staff of the Pan American Union that he will still maintain his interest in the cause of Pan Americanism.

HON. HENRY P. FLETCHER, THE AMBASSADOR TO MEXICO.

The good wishes and the numerous laudatory notices which Hon. Henry P. Fletcher, erstwhile ambassador of the United States to Chile, received on leaving that country to become ambassador to Mexico, attest amply to the esteem in which he was held by the accredited nation and the affection he had gained in the hearts of both private and official life. Ambassador Fletcher first went to Chile in 1909 as envoy extraordinary and minister plenipotentiary, and through his engaging personality, tactfulness, and skillful diplomacy soon won an enviable position. In 1912, when starting on a leave of absence, he was tendered a farewell banquet by the then minister of foreign affairs, and the remarks delivered on that occasion by the various speakers indicated in no uncertain terms the good will which Mr. Fletcher had brought about between Chile and the United States. It was therefore peculiarly fitting that the services of Mr. Fletcher were recognized when on October 1, 1914, he was raised to the rank of ambassador with the elevation of the diplomatic mission in that country. That the Chilean Government appreciated the honor conferred upon Mr. Fletcher in naming him as the first ambassador was shown in the many courtesies and attentions offered him at the time. The Union Club at Santiago honored him with a special banquet and the University of Chile conferred upon him the honorary degree of doctor of laws and political science. The designation of ambassador Fletcher to the post at Mexico is regarded as a high tribute to his ability and service, and he carries with him the sincerest wishes of his numerous friends in the United States as well as in Chile for a continuance of his splendid work and for a most successful mission in his new charge.

RESIGNATION OF SR. DON F. A. PEZET, PERUVIAN MINISTER TO THE UNITED STATES.

The resignation of Sr. Don F. A. Pezet as envoy extraordinary and minister plenpotentiary near the Government of the United States, and the consequent severance of his connection with the Governing Board of the Pan American Union, became effective on March 31, 1916. At a meeting of the Governing Board, held March 28, his retirement was announced and became the occasion for many expressions of regret on the part of the ambassadors and ministers assembled. Among others who spoke feelingly of the resignation of Minister Pezet and of his eminent services as a member of the governing body of the Pan American Union were the ambassadors of Brazil and of Chile and the ministers of Bolivia, of Uruguay, and of Guatemala. All expressed their sincere regrets at this severance of their pleasant official relations with their distinguished confrère and voiced the hope

HON. HENRY P. FLETCHER,

Appointed United States ambassador to Mexico.

The designation of Mr. Fletcher as ambassador to Mexico is regarded as a fitting recognition of his diplomatic service and ability. As minister to Chile, and later when raised to the rank of ambassador, he continued the splendid work of bringing the relations of the two countries closer together and rendering their interests more reciprocal. Ambassador Fletcher entered the diplomatic service as second secretary of the legation at Habana, and has risen to his present position, rank by rank, through his acknowledged tact, skill, and experience in diplomacy.

of his early return. Minister Pezet responded in an eloquent and touching manner to the encomiums and kind sentiments expressed by his colleagues, expressing his appreciation of their past cordial relations and of the uniform courtesy and kindness with which he had always met, personally as well as officially, and gave assurances that his personal interest in Pan American affairs would always continue.

With the retirement of Sr. Pezet the Governing Board of the Pan American Union loses one of its most enthusiastic members. He will be greatly missed, not only as a member of the Governing Board and of the diplomatic corps in Washington, but as one who had an exceptionally large circle of friends. He was almost as well known, as a representative Latin American diplomat, in Chicago, San Francisco, and New Orleans as in the National Capital, and he undoubtedly has done a great work in making Peru favorably known throughout the United States and in promoting that kind of practical Pan Americanism which develops actual friendship and mutual knowledge among the American Republics.

VISIT OF FINANCIAL AND COMMERCIAL COMMITTEE TO PERU, BOLIVIA, CHILE, AND ARGENTINA.

As another practical step in the program of Secretary McAdoo to carry out the purposes of the Pan American Financial Conference, a committee of citizens of the United States sailed from New York on April 15 for Bolivia, Chile, and Peru to return the visit of the eminent bankers and business men of those countries who attended the conference.

This trip is being made in response to a resolution inviting bankers and business men of the United States to visit the Latin American countries, which was introduced by Sr. Dr. Pedro Cosio, chairman of the Uruguayan delegation, and unanimously adopted by the Pan American Financial Conference. Secretary McAdoo, in pursuance of that resolution, appointed a committee to arrange the return visits, of which Mr. James A. Farrell, president of the United States Steel Corporation, is chairman. The party which sailed to-day was organized by Mr. Farrell's committee.

A similar committee has just returned from a visit to Central America, and committees to visit Argentina and Brazil sailed from New York on April 29. Like committees will be formed to visit the other countries of Latin America.

The committee which sailed April 15 is composed of the following members:

O. M. Clark, president Clark & Wilson Lumber Co., Linnton, Oreg.

A. W. McLellan, president Alden Mills, New Orleans, La.

Ernest H. Wands, of the American International Corporation, New York City.

The itinerary of the party is as follows:

Leave New York	April 15
Arrive Habana	April 19
Leave Habana	April 20
Arrive Colon	April 23
Leave Balboa	April 24
Arrive Guayaquil	April 27
Leave Guayaquil	April 27
Call Payta	April 28
Call Eton	April 28
Call Salaverry	April 30
Arrive Callao	May 1
Leave Callao	May 8
Arrive Mollendo	May 10
Leave Mollendo	May 10
Arrive Arequipa	May 10
Leave Arequipa	May 12
Arrive Puno	May 12
Leave Puno	May 13
Arrive Guaqui	May 13
Leave Guaqui	May 13
Arrive La Paz	May 13
Leave La Paz	May 16
Arrive Antofagasta	May 20
Leave Antofagasta	May 22
Arrive Valparaiso	May 24
Leave Valparaiso	May 26
Arrive Santiago	May 27
Leave Santiago	June 4
Arrive Buenos Aires	June 6
Leave Buenos Aires	June 8
Arrive and leave Montevideo	June 9
Arrive and leave Santos	June 12
Arrive and leave Rio de Janeiro	June 13
Arrive and leave Bahia	June 16
Arrive and leave Barbados	June 24
Arrive New York	June 30

The committee will make a special study of economic conditions on the west coast of South America and the best means of strengthening financial and commercial relations between the countries visited and the United States. The committee will give especial study to financial, banking, credit, and general business conditions; transportation facilities; harbor and customs regulations; port and dock charges; import and export statistics to and from the countries of Europe and America; the availability of fuel, including coal, oil, and wood; natural resources of the countries, agricultural, mineral, and industrial; the effect the European war has had upon the shifting of trade from Europe to the United States; the extent of land and irrigation projects that may be attractive to American enterprises.

The members of the committee upon their return to the United States will make a report to Secretary McAdoo for the information of the International High Commission.

The Argentine committee, composed of David Beecroft, editor of the Automobile Motor World (New York); Owen Gathright, vice president of Harbison & Gathright, Louisville, Ky.; and J. Ralph Pickell, secretary of the Council of Grain Exchanges, Chicago, Ill., left New York on the steamer *Vaubon* on April 29. The itinerary includes a stop at Barbados May 7; Bahia, Brazil, May 13; Rio de Janeiro, May 16; Santos, May 18; Montevideo, Uruguay, May 21; and thence to Buenos Aires. Returning, the party will leave Buenos Aires June 8 and, stopping en route at Montevideo, Santos, Rio de Janeiro, Bahia, and Barbados, is expected to reach New York June 30.

THE PAN AMERICAN CONFERENCE AT BUENOS AIRES.

The following is a summary of an article relating to the Buenos Aires conference prepared by John Barrett, director general of the Pan American Union, for the Nation's Business, the official publication of the Chamber of Commerce of the United States:

There is now meeting in Buenos Aires a Pan American conference of immeasurable importance to Pan American relations. Upon its outcome may depend whether the growth of Pan American commerce and Pan American interrelationship in general is to be rapid and sure or slow and uncertain. In many respects it is the most important Pan American meeting in the last fifty years. Never before in any American capital has there been such a representative assembly of notable leaders of commerce and finance. The agreements they reach, the recommendations they make, and the resolutions they approve should result in the most practical steps ever taken to advance material Pan Americanism.

Upon the adjournment, however, of this conference will come a critical responsibility for the Governments and great commercial and financial interests of all the Republics. Unless the acts of the conference are approved by such interests and then ratified and made effective by the legislation of the respective governments participating, the achievement of the desired ends and purposes of the conference will be long delayed. The fatal fact connected with nearly every Pan American conference held in the past has been the failure of the participating Governments to ratify the resolutions approved by the delegates. Let all good Pan Americans hope that inasmuch as not only the United States is represented at this conference by its able Secretary of the Treasury, its Assistant Secretary of the Treasury, a leading United States Senator, and a group of its most influential business men but as many of the other Governments are correspondingly represented by their able Ministers of Finance and leaders of public opinion, that all of the American Republics will without delay put into national law or international treaties such recommendations as the delegates of this great conference may agree to present to their respective Governments.

The Government, the people, and the press of Argentina are to be congratulated upon the interest they are manifesting in this conference and the hospitality they are showing to the delegates of all the countries.

THE BANDELIER NATIONAL MONUMENT.

From an archæological and ethnological point of view the most interesting portion of the United States is to be found in that vast

region extending from the States of Utah and Colorado on the north through New Mexico and Arizona to the northern boundary of Mexico. It is in this part of the country that are to be found the ancient pueblos and ruins of the cliff and communal dwellings of the aboriginal Americans. Under the auspices of the School of American Archæology, of Santa Fe, N. Mex., numerous excavations and extensive research have brought to light much valuable information relative to the mode of life, culture, and development of these prehistoric races, and in order to safeguard and preserve the ruins which are the source of such information certain large areas have been set aside as national reservations. One of the most important of these reservations has been given the name of the Bandelier National Monument, in regard to which President Wilson issued his proclamation on February 11, 1916, the preamble and first paragraph of which are as follows:

Whereas certain prehistoric aboriginal ruins situated upon public lands of the United States, within the Santa Fe National Forest, in the State of New Mexico, are of unusual ethnological, scientific, and educational interest, and it appears that the public interests would be promoted by reserving these relics of a vanished people, with as much land as may be necessary for the proper protection thereof, as a national monument:

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the power in me vested by section 2 of the act of Congress approved June 8, 1906, entitled "An act for the preservation of American antiquities," do proclaim that there are hereby reserved from appropriation and use of all kinds under all of the public-land laws, subject to all prior valid adverse claims, and set apart as a national monument, all the tracts of land, in the State of New Mexico, shown as the Bandelier National Monument on the diagram forming a part hereof.

That the name Bandelier was selected for this national monument is a deserved tribute to the memory of one who ranks as one of the greatest American scientists and one whose labors were truly Pan American in scope. It was only a portion of Adolph Bandelier's work, under the auspices of the Archæological Institute of America, that made him preeminently the leading authority on the history and ethnology of the aboriginal tribes that occupied the section of the United States above referred to. He published several important monographs dealing with special phases of the work, but it is his "Final Report of Investigations Among the Indians of the Southwestern United States," published in two parts—the latter part in 1892—that embraces practically all phases of his work and is to-day regarded as perhaps the most authoritative scientific treatise on the subjects dealt with that is extant.

It was in 1892 that the great financier and philanthropist, Henry Villard, selected Bandelier to head an expedition into Ecuador, Peru, and Bolivia for the purpose of making archæological studies and collecting interesting antiquities in the "Land of the Incas." During the following year, while he was still engaged in his researches, Bandelier's first work dealing with his South American investigations

Photo by Harris-Ewing.

SR. DON ENRIQUE CUEVAS,

Counselor of the Chilean Embassy at Washington, D. C., who is now chargé d'affaires of that country pending the appointment of an ambassador to succeed the retiring diplomat, Sr. Don Eduardo Suárez Mujica. Sr. Cuevas has had a wide experience in diplomatic affairs. He served as first secretary of the Chilean Legation in London for five years and was delegate to the Chilean nitrate commission in London. After his service in London he was appointed chargé d'affaires in Sweden, and when the legation in the United States was elevated to the rank of an embassy, Sr. Cuevas was appointed counselor. Sr. Cuevas has also been governor of the Province of Valdivia, Chile.

appeared. Its title was "The Gilded Man (El Dorado), and Other Pictures of the Spanish Occupancy of America," and it is in this work that he gives the results of his careful investigations and researches relative to the origin of the story and the actual location of the fabled "Land of El Dorado." He remained in South America until the latter part of 1896, the last two years of his work being at the instance and under the auspices of the American Museum of Natural History, of New York. The splendid work "The Islands of Titicaca and Koati," published in 1910 by the Hispanic Society of America, was perhaps the best known of his works on South American antiquities. His portrayal of the character, customs, superstitions, and general life of the Aymara Indians is incomparable as an ethnological study, while his exhaustive investigations anent the civilization of the Incas has given to the world the real facts instead of the fanciful pictures of myth and tradition.

Bandelier's work was therefore truly Pan American, and it is eminently fitting that this great national monument, located in a region whose history is intimately interwoven with that of the Spanish conquest and occupation of Mexico and whose ruins antedate, perhaps by many centuries, the Columbian discovery of America, should be given his name. At the time of his death, in Madrid, Spain, March 19, 1914, Bandelier was engaged in the preparation of a voluminous work which was to have been his magnum opus, a "Documentary History of the Rio Grande Pueblos of New Mexico," the first volume of which was not quite complete when his final illness took him from his labors. He and his wife had gone to Spain to prosecute their researches in the ancient archives of Seville, where are to be found rare and original documents bearing on the subject, so that even the last days of Bandelier's life were spent in the work he loved.

A NEW AND DIPLOMATIC AND CONSULAR REVIEW.

An illustrated monthly periodical devoted to the interests of the diplomatic and consular service made its initial appearance with the April issue. The magazine is called "Godoy's Diplomatic and Consular Review" and is edited and published in Washington by Señor Jose Godoy, the well-known diplomat and international lawyer. Sr. Godoy represented the Government of Mexico in Washington and was later the minister of that Republic to Cuba. The review presents in its foreword its purposes to avoid political discussion, and will confine its news to the doings of diplomats and consuls of all nations, short sketches of foreign missions, and consulates of foreign nations in the United States. Its scope will be broad, as commercial and diplomatic notes from various parts of the world are reviewed, and some attention is given to book notes.

PUNTA ARENAS—THE WORLD'S SOUTHERNMOST CITY[1]

IT was on a bright, coldly crisp Sunday morning early in April that the writer obtained his first view, through an open porthole, of the thriving little Chilean city on the far away Strait of Magellan. Punta Arenas (Sandy Point), the metropolis of the southern tip of South America, may justly claim to be the southernmost city in the world, for the only permanent town that is nearer to the South Pole is the little penal settlement of Ushuaia, whither Argentina sends some of her more desperate criminals for safekeeping, located on Beagle Channel and numbering some 400 inhabitants, prisoners included. Punta Arenas, however, is really a city of 13,000 or more population, and is about as lively and hustling as any place of its size elsewhere in the world.

To anyone at all familiar with its history a trip through the Strait of Magellan is fraught with interest, while those who love the beauties of rugged nature must needs be charmed with the wonderful scenery of this narrow passage from ocean to ocean. We had entered the strait on the morning of the day before we disembarked at Punta Arenas, coming from the Pacific side, and the following paragraphs from the writer's notebook may give a faint idea of the natural beauties of this famous waterway.

Steaming close to the grotesque pinnacles and sharpened rocks of Desolation Island, outlined just now against a leaden sky, we saw, lying immediately northeast and on our other side, the dreary waste of King William IV Land. As we proceeded the strait began to narrow, and by the time we glided along between Santa Ines Island on the south and Cordova Peninsula on the north, both shores seemed almost within pistol shot. And then began a series of slowly shifting scenes of rugged ice-capped peaks, of blue-green glaciers sweeping down from mountain heights, their opalescent hues changing each instant as the snowy blanket covering them lay thinning in the warming sun. The skies had cleared, and for once the western end of this famous passage was to be traversed in fair weather. * * *

The great backbone of the South American Continent, the longest and highest mountain range known to the world, is broken here and

[1] By Edward Albes, of Pan American Union staff.

MOONLIGHT ON THE BAY, PUNTA ARENAS, CHILE.

IN THE STRAIT OF MAGELLAN.

"And then began a series of slowly shifting scenes of rugged ice-capped peaks, of blue-green glaciers sweeping down from mountain heights, their opalescent hues changing each instant as the snowy blanket covering them lay thinning in the warming sun."

the sea has filled the narrow, tortuous vale between its separated peaks. Great bluffs of brown and gray, topped by crags of glittering ice and snow, hang over the water's edge, while here and there a valley forms the bed of glaciers, those solid rivers which bear their slow, resistless way to the lapping waves, there to be broken off when the Storm King lashes the waters into fury, and thus are added great blocks of floating ice to the picturesqueness as well as to the dangers of the way.

Between the shifting clouds the sun burst through and gave us pictures of light and shade, of shimmering snow on distant peaks, of vegetation of light green where the bright rays flashed and darker olive tints where shadows fell. For miles the strait was calm and mirrored the cloud-flecked skies as would a polished looking-glass, while circling around the slow-moving ship the snowy gulls and albatross lent beauty to the scene.

Picturesque almost beyond compare in fair weather and in its brief summer season, in winter its sudden storms, its treacherous currents, and the icy blasts that almost constantly sweep up from the Antarctic regions, have made it a dreaded passageway for sailing vessels ever since Magellan's dauntless courage and indomitable will gave knowledge of it to the world. A brief historic retrospect may serve to refresh the reader's recollection in regard to the great navigator's most daring feat and remind him of the dark story of the strait and of how the city of Punta Arenas came to be.

Fernando de Magalhaes (miscalled Magellan by those who speak English) was Portuguese by birth, but was in the service of the Spanish Crown when he left Seville, on August 10, 1519, with his small fleet of vessels, to find a way around the world. Five little ships there were—the largest, the *Trinidad*, of 130 tons and 62 men, the smallest, the *Santiago*, boasting of but 60 tons and 30 men. And with these he set out to keep his promise to his King to find a passage to the Far East.

The winter was spent at Port St. Julian, where cold and hunger played havoc with his crews. Even the hides on the ships' yards were eaten to keep from starvation, and mutiny was overcome by the hanging of one of the ringleaders, while one of the ships deserted and returned to Spain. Magellan's iron resolution was not shaken, however, and on October 21, 1520, he discovered the jutting point which he named Cape Virgins and entered the eastern end of the strait.

In the face of the icy blasts from the Antarctic regions, half starved, and with almost incredible hardship and toil, the expedition felt its way along, and finally, on November 27, emerged into the Pacific. Thus was blazed not only the pathway to the East, but the subsequent circumnavigation of the earth gave final proof that it was round and much greater in circumference than the geographers of

Courtesy of Outing Magazine.

VIEWS OF PUNTA ARENAS, CHILE.

Top: The city and harbor of Punta Arenas viewed from the deck of a vessel anchored out in the bay. Bottom: Scene of the water front when one of the cold blasts from the Antarctic regions lashes the waters of the Strait of Magellan into fury.

IN THE HARBOR OF PUNTA ARENAS.

Showing one of the modern piers where freight and passengers are landed in the "southernmost city of the world."

the time had even dreamed. Magellan himself, as is well known, came to his death in an encounter with the natives of one of the Philippine Islands and never reached his native shores to reap the reward for his successful enterprise. Only one of the little vessels, the *Vittoria*, succeeded in returning to Spain with but 31 men of the daring expedition left.

After Magellan's discovery of the waterway, numerous other bold explorers dared its dangers, invariably at the expense of ships and human lives. Garcia Jofre de Loyosa succeeded in passing through in 1526, losing one of his ships, the *Santi Spiritus*, and many of his men. Some of the expeditions failed to get even as far as Cape Virgins, and because of the numerous disasters the Spaniards finally abandoned the route almost altogether, until a certain bold Englishman, one Sir Francis Drake, in 1578 passed through the strait and up the coast as far as California, and thence plowed a new furrow in the seas around the world. It was this particular feat which really was responsible for the founding of a settlement on the dreaded strait.

"Peru was at peace, when for our sins some English pirates pressed through the Strait of the Mother of God, formerly called the Strait of Magellan, into the South Sea, under the command of Francisco Drac, a native of Plymouth, a man of low condition, but a skillful seaman and a valiant pirate," is the way the old Spanish chronicler puts it. Wherefore Spain, in order to protect her rich ports on the Pacific coast of South America from the depredations of this marauding "Drac" and similar piratically inclined gentry, determined to found a settlement, which at the same time would serve as a protecting fortress, at some convenient point on the strait. An expedition was fitted out, and under the leadership of the famous navigator, Pedro Sarmiento, the colony was established not far from the present site of Punta Arenas. Its career, however, was but short-lived, for hostile Indians, cold, and starvation soon wiped it out of existence, and the shores of the strait again became uninhabited by civilized men, and thus remained for many years.

In 1598 the Dutch appeared on the scene, and one Sebald de Wert spent some nine months in attempting to get through from the Atlantic to the Pacific, but failed. By the end of the seventeenth century the Fuegian Archipelago became the refuge of various and sundry gentlemen of fortune known as buccaneers, and thus was added another element to the dangers of this waterway. It was not until the early part of the nineteenth century that the English expedition, sailing in the *Adventure* and the famed *Beagle*, explored the Fuegian Archipelago and partially mapped and charted the passages of the strait. Among the other English names given to various mountains, channels, and topographical points, Mount Darwin here

Courtesy of "The South American."

THE BUSY WHARVES OF PUNTA ARENAS.

Showing freight collected on the wharf and awaiting transportation to the city. The foreign commerce of Punta Arenas amounts to nearly $12,000,000 annually.

TWO VIEWS OF PUNTA ARENAS, CHILE, THE SOUTHERNMOST CITY OF THE WORLD.

perpetuates the name of the great author of "The Origin of Species," who was a member of the expedition.

It was not until 1843 that the idea of establishing a permanent settlement on the strait was again revived. In that year the Republic of Chile started a penal colony not far from the present location of Punta Arenas. In 1851 the prisoners mutinied, killed the governor, the chaplain, guards, and many foreigners, and burned the town to the ground. A few months later, however, the leader was captured by the Chilean authorities and shot, and the rebellion was quelled. At that time the town boasted of a population of about 700. It was rebuilt on its present site, and since then has made steady and surprising progress.

We anchored in the little bay on which the city lies a little after nightfall, and the writer was surprised to see the hundreds of points of illumination which flashed out from the shore and proclaimed the presence of an electrically lighted city. It was not until the following morning, however, that the well-built houses and broad streets came into plain view. The land slopes gently down toward the water's edge, and the bay is too shallow to permit the close approach of large steamers. Three well-constructed jetties extend out into the bay, and it was on one of these that our small boats landed us.

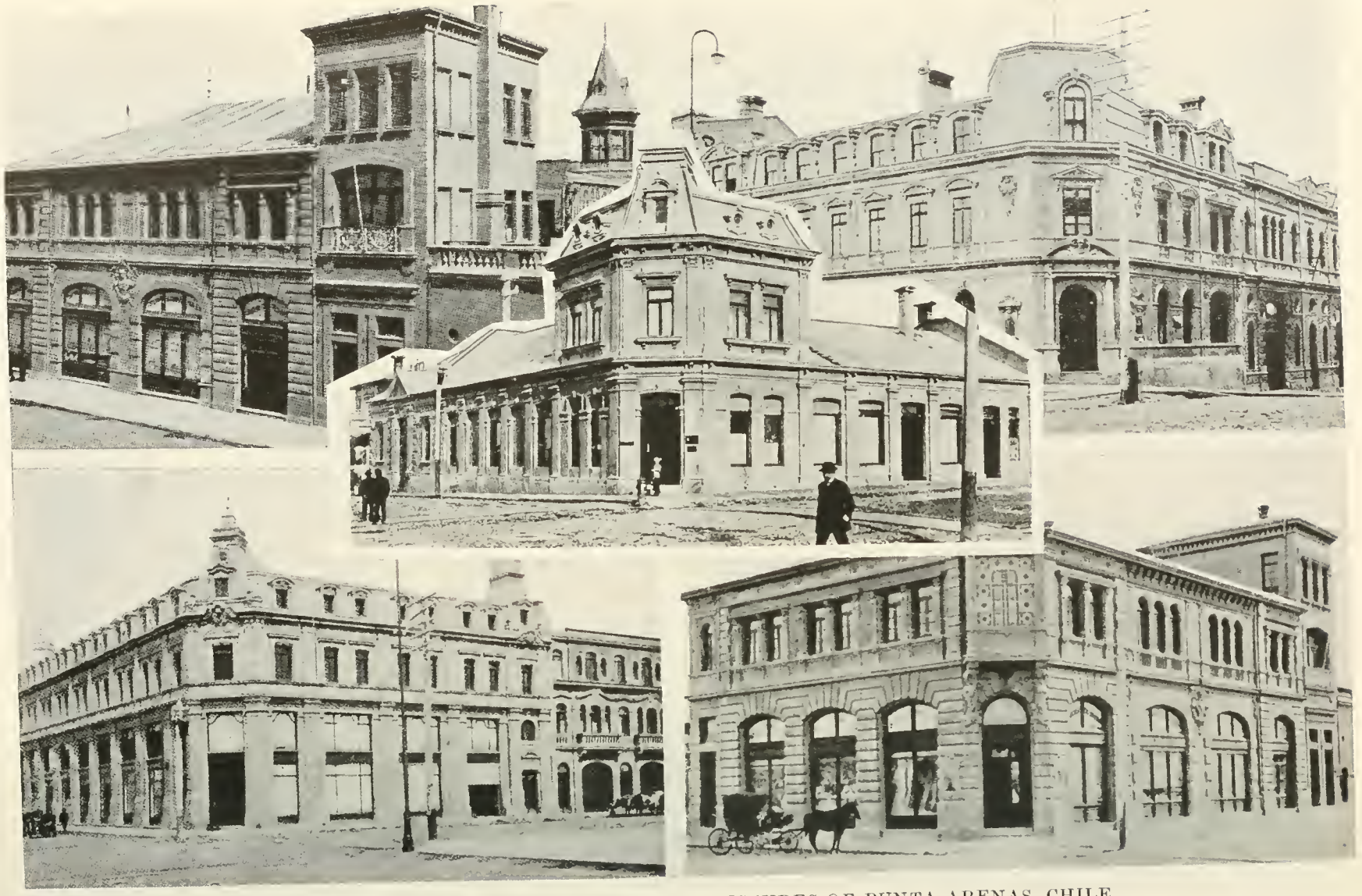
In contrast to many of the older Latin American cities, Punta Arenas can boast of its fine wide streets, laid off parallel and at right angles to the water front. The business section of the town, along Calle Roca and the Plaza de Armas, has solid and substantial structures, some of which, like the Municipal Building and the Anglo-South American Bank, would grace many a larger city. The Plaza de Gobernacion, facing which are some of the best buildings in the city, among them a fine Catholic church, is a well laid out little park, whose green setting and bright flowers lent added attraction to the place. A short distance from it stands the most palatial and ornate private residence in southern Chile—the home of Señora Sara Braun de Valenzuela, a very wealthy lady, whose fortune, we were told, was originally made in the sheep industry.

It is this industry, by the way, which largely accounts for the wealth and remarkable progress of Punta Arenas. The cold climate of Tierra del Fuego and the strait region generally is peculiarly adapted to sheep raising. In order to protect them from the rigors of the low temperatures nature provides the sheep with unusually thick and heavy coats of wool, the quality of which is such that it commands good prices in the markets of Europe. Its special qualities are that it washes very white and will take the most delicate dyes exceptionally well. Thus Punta Arenas has become one of the great wool-exporting ports of the world, something over 20,000,000 pounds being exported annually.

Courtesy of "The South American."

SCENES IN PUNTA ARENAS, CHILE.

Main picture: A summer holiday in Punta Arenas during the month of January. Oval insert: The same plaza covered with snow in July.



SOME OF THE SUBSTANTIAL BUSINESS STRUCTURES OF PUNTA ARENAS, CHILE.

It is estimated that there are now at least 2,000,000 sheep in the territory of Magallanes alone, whereas only 35 years ago there were but 185 head all told. Certain breeds of cattle also seem to thrive in this section, and it is estimated that there are over 30,000 head in the territory.

The magnitude of the live-stock industry may be surmised when it is stated, on the authority of the American Consul, that one large company, capitalized at $7,300,000, at the time of our visit owned 737,453 hectares of land (hectare equals 2.47 acres), on which they maintained no less than 1,253,000 sheep, 25,000 head of cattle, and 9,183 horses. For the year 1911 the wool production of this company alone amounted to nearly 9,500,000 pounds, 1,190,683 of its sheep having been shorn, yielding an average of 7.91 pounds of wool per animal.

As a result of the live-stock industry numerous factories for the local preparation and handling of its products have been established. Among these are refrigerating, canning, trying, beef-extracting, fellmongering, sausage casing, and pickling plants. There are two modern refrigerating establishments, the combined output of which amounts to nearly 400,000 frozen animals annually. The try works connected with these two plants market over 750,000 pounds of tallow annually, while six other trying plants have about an equal output.

During the year 1912 (the year of the writer's visit) the statistics of the port of Punta Arenas showed that the following animal products were exported: Wool, 20,563,833 pounds; raw sheepskins, 1,656,465 pounds; shorn and salted sheepskins, 659,182 pounds; cattle hides, 1,141,111 pounds; all of Chilean production. In addition, 8,844,332 pounds of wool and 291,198 sheepskins of Argentine production were transshipped at this port for export to Europe.

Another quite important industry of the strait region is that of whaling. During the season closing April, 1913, the catch of one company amounted to over 400 whales, and 2,000 tons of whale oil, valued at $214,000, were shipped to England. Considerable revenue is also derived from sealing and the hunting of other fur-producing animals, while lumber, the product of several modern sawmills in Punta Arenas, is also becoming an important export.

Among the leading imports of Punta Arenas may be mentioned the following: Wines, liquors, etc., valued at over $800,000; textiles to the value of $700,000; vegetable products, over $560,000; animal products, $450,000; iron, steel, and other mineral products, $440,000; chemicals, drugs, etc., $285,000; machinery, tools, etc., $240,000. The total foreign trade of the port amounts annually to about $11,000,000, of which a little less than $4,000,000 represents the Chilean imports and something over $5,000,000 the exports, while the imports and exports of Argentine goods transshipped amount to

STREET SCENE IN PUNTA ARENAS, CHILE.

To people living in the north temperate zone "going south" means getting into a warmer climate. On the other hand, to people living in Punta Arenas "going north" has that significance. In July the streets of the "southernmost city of the world" are usually covered with snow, as shown in the above picture, while January is generally the warmest month of the year.

THE BULLETIN'S SOUTHERNMOST AGENCY.

The Bulletin, with all due modesty, may say that it reaches some very remote sections of the world. The above reproduction of a photograph shows that its wide-awake agent at Punta Arenas is not averse to letting the public know just where the Bulletin may be obtained in this metropolis of the "far south."

nearly $2,000,000. For a city of 13,000 inhabitants this is a remarkable showing. According to a recent report of the governor of the territory of Magallanes the exports of the entire territory for the year preceding September, 1915, were valued at about $13,600,000.

That the people of Punta Arenas are prosperous may be surmised when it is stated that in the official report of the governor it is shown that in the savings departments of the three banks of the city there are 2,804 accounts that reach 1,000 pesos; 824 accounts from 1,000 to 5,000 pesos; and 221 accounts from 5,000 to 10,000 pesos (peso, paper, equals about 16 cents United States currency). It is furthermore stated that the credit information book reveals the fact that there are 79 fortunes of more than $100,000; 64 fortunes of more than $200,000; and 31 of more than $400,000, while there are several that are estimated at from $1,000,000 to $5,000,000.

For the accommodation of travelers Punta Arenas has three hotels—the Royal, with 62 rooms; the Kosmos, with 30 rooms; and the Hotel de France, with 22 rooms. Rates, including meals, range from $2.50 to $4.50 per day, with material reductions for board by the month.

The importance of Punta Arenas as a port is shown by the shipping statistics, which state that the number of vessels which entered the port in 1912 was 683, of which 22 were war vessels and 661 merchant vessels, the latter class having an aggregate net tonnage of 1,489,756. Of the merchant vessels 433 were steamers engaged in foreign trade and 210 in coastwise trade, while there were 18 sailing vessels engaged in foreign trade.

The commercial and industrial progress of the territory of Magallanes and its wide-awake capital is largely dependent upon the continued development of the live-stock industry and allied activities connected therewith. The remarkable growth of Punta Arenas in population and wealth during the last few years is an indication of what the future holds in store. The demand for food products, wool, hides, and all the materials that go to feed and clothe the civilized world is constantly increasing. Large areas suited to cattle and sheep raising still remain to be exploited in the strait region, and that the wealth and energy of the people of that section will not fail to develop these resources is a foregone conclusion. Wherefore it is safe to predict a bright future of progress and prosperity for the "southernmost city of the world."

CENTRAL AMERICA OF TO-DAY—NICARAGUA[1]

ON April 11, 1916, the Congress of the Republic of Nicaragua ratified a convention which had been drawn up by that country and the United States, and which two months prior had been ratified by the Congress of the United States. Soon this treaty will be proclaimed by the Presidents of the two contracting nations and its terms will become effective. The treaty in question grants to the United States the exclusive proprietary rights for the construction and operation of an interoceanic canal by a Nicaraguan route, the lease of certain islands, and the right to establish a naval base on the Gulf of Fonseca. In return for these important concessions the United States is to pay to the Republic of Nicaragua the sum of $3,000,000.

The ratification of this treaty marks a new milestone in the history of Nicaragua, and is hailed with much satisfaction not alone by that country, but by its many friends who have always viewed it in the hopeful and optimistic spirit of to-morrow—the land of great promise when once it can enjoy a new start on its journey of progress. By the terms of the convention this sum is to be applied by Nicaragua upon its indebtedness or other public purposes for the advancement of its welfare. And now that country can in a measure commence to carry into execution that plan of improvement and development which should enable it to attain a position of importance commensurate with its vast territory and remarkable resources.

In order to properly appreciate present-day conditions in that land you must know something of its past history; of its earnest efforts, despite frequent interruptions, to enjoy a natural and normal development along political, social, and economic lines; you must make sympathetic allowance for the many years of unrest which it has endured; and then you will understand why it is that the passage of this convention has raised the anxiety of a nation which is enjoying a period of peace and quiet, and, in its endeavor to march onward needed just some such material assistance as this to enable it to secure a new lease on national welfare.

Nicaragua is a country bountifully blessed with nature's gifts. Writers have called it "The Beautiful." In colonial times its cities were referred to as the "fairest jewels of the Spanish Crown." And now that the fates are again smiling kindly upon it there is every reason to look forward to the time in the not too distant future when it will again shine forth as one of the jewels of Central America. The

[1] By Harry O. Sandberg, of Pan American Union staff.

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THE DOCKS AT CORINTO, NICARAGUA.

NATIONAL PALACE, MANAGUA, NICARAGUA.

This palace was formerly used as a convent, but is now the President's headquarters and legislative hall. The building is one of the largest and best constructed of its kind in Central America.

Photo by William V. Alford.

MOUNT MOMOTOMBO, NICARAGUA.

Photo by Alford.

CASTILLO.

country with all its natural attributes is there awaiting the magic touch which shall transform its vast potential resources into productive wealth. Its people are ready and willing to lend a helping hand to those who will come to its shores for the purpose of colonizing or of converting its broad plateaus and fertile valleys, its immense forests and richly-laden mines into profitable enterprises. Of course, it will require capital, and perhaps capital on a large scale, but the attractive character of that country, its favorable geographic position, and its natural physical qualities, combine to make it one of the most desirable countries for profitable development. Although agriculture represents at present its most prolific source of revenue, in truth this phase of development has not yet really commenced, while the mineral wealth has just barely been touched.

Of the five Central American countries Nicaragua is the largest territorially, with an area of 50,000 square miles, about the size of the State of New York. Its population is estimated at 600,000, and the country conducts an annual foreign commerce varying from seven to thirteen millions of dollars. It was just beginning to resume its normal trading capacity when the sudden upheavals caused by the European war gave it a setback. There is, however, one feature of the commercial life of Nicaragua that is especially noteworthy and affords an encouraging expression of the activity of the people. It is the fact that in the commerce of the country there are engaged a large number of native Nicaraguans, and this is equally true in the agricultural and mining pursuits. They own and operate land, engage in retail trade, and display a solid and substantial energy that is the best guarantee for the future of the country.

Like some of its sister countries Nicaragua boasts of two coast lines, one on the Atlantic and the other on the Pacific. On account of the lack of direct and easy communication between the two shores, the eastern and the western sections of the country have had a different kind of development so that the character of the towns and populations of the one coast differs materially from those on the other. About 75 per cent of the entire population live on the Pacific side, and the majority of this number are centered around the capital and the adjacent cities as Leon, Masaya, Granada, and Rivas. But though the Atlantic coast does not stand out especially strong in point of population, it is of great importance commercially. On this coast are the seaports of Bluefields, Cape Gracias a Dios, Las Perlas, and San Juan del Norte, popularly known as Greytown. A regular weekly steamship service operates between New Orleans and Bluefields, the principal port, and local steamers supply communication between the various other points. The city of Bluefields has a population of say 5,000 and through its port pass the shipments of bananas, mahogany, rubber, gold, silver, and to some extent hides and coconuts. Practically the entire export trade of eastern Nicara-

THE POLICE STATION, LEON, NICARAGUA.

THE CATHEDRAL OF LEON, NICARAGUA.

This splendid edifice, constructed at a cost of $5,000,000, was completed in 1743. Its architectural features are similar to those of the celebrated Cathedral of Seville, Spain. It was in this cathedral that were celebrated the funeral rites of the lamented Nicaraguan poet, Ruben Dario, with all the impressive ceremonies of the church. The Bishop of Leon, Monseñor Pereira, pronounced the principal eulogy during the obsequies, and the body now rests in this sacred temple.

gua is carried on with the United States. It will be recalled the banana industry is the chief product and nearly 200,000 acres of land are given over to the cultivation of this fruit. The two to two and a half billion of bunches that are sent out annually find their way to North American markets, and as a result of this close commercial intercourse with the United States this coast was affected but little by the general depression that followed the outbreak of the European war. In fact, the products upon the exportation of which the prosperity of the Atlantic section depends did not show a decrease in the aggregate either in quantity or in value, and the exports increased several per cent due to the revival in the mahogany industry.

As already suggested, the eastern section is separated from the western not only by huge chains of mountains, plains, and forests, but by tradition and customs. When, however, the nation shall find it possible to construct the railroad connecting both shores, for which several routes have been proposed, there should follow a fusion of interests and benefits that will make for the fullest development of the entire country.

But the Nicaragua of historic fame and tradition is that section which borders on the Pacific. Here it is that you see the real beauties of the country; where you find the real Nicaraguan population, enjoy their charming hospitality, delight in their customs, and appreciate the public institutions that strive for the welfare of the country. Here, too, you experience the range and variety of climate from the tropical warmth of the coastal towns to the refreshing coolness of the higher interiors.

Because of its inaccessibility from the Atlantic seaboard the trip to Managua is most conveniently made from Corinto, the principal port on the Pacific. On this coast there is also the port of San Juan del Sur, an outlet for the Department of Rivas. Steamships that ply between San Francisco and Panama make Corinto a regular port of call, but only stop at San Juan del Sur when conditions warrant; but between these two points pass nearly 70 per cent of the country's commerce.

At Corinto your vessel docks alongside a splendid wharf, and as you descend the gangplank you meet a goodly number of the population who eagerly look forward to boat days for activity and excitement. Men and women crowd the wharf with gay-colored birds, brilliantly plumaged macaws, verdant parrots and parrakeets, tiger and puma skins, Panama hats, offering them for sale, and there are lively scenes along the dock throughout the stay of the ship. Corinto itself is a pretty port. The entrance to the harbor is dotted with green islands and the shores lined with tall graceful palms. The streets are clean and well laid out. Trees and flowers bloom everywhere, the wooden-framed buildings are tidily kept, while the many well-stocked shops bespeak the commercial importance of this place.

Courtesy of Centro America.

BODY OF RUBEN DARIO IN THE DEATH CHAMBER.

The home of the great American poet, Ruben Dario, in Leon, Nicaragua, where he died February 7, 1916, became the center to which were drawn many hundreds of his sorrowing friends and admirers while his remains lay in state. The entire population of the city, as well as many people from neighboring localities, filed by the casket in mournful silence to take a last look at the body, which was guarded by a special detail of the alumni of the University of Leon and of the Military Academy of Nicaragua.

Courtesy of Centro America.

FUNERAL OF THE LATE RUBEN DARIO, AT LEON, NICARAGUA.

The death of Dario was declared by the Government of Nicaragua as the occasion for national mourning. In accordance with its official decree the military honors paid the deceased were the same as those usually accorded a President of the Republic. The funeral was attended by representatives of not only the National Government of Nicaragua, but also by those from the other Central American Republics and delegations from a great number of public and private institutions. It was estimated that over 20,000 persons attended the impressive ceremonies.

Photos by William V. Alford.

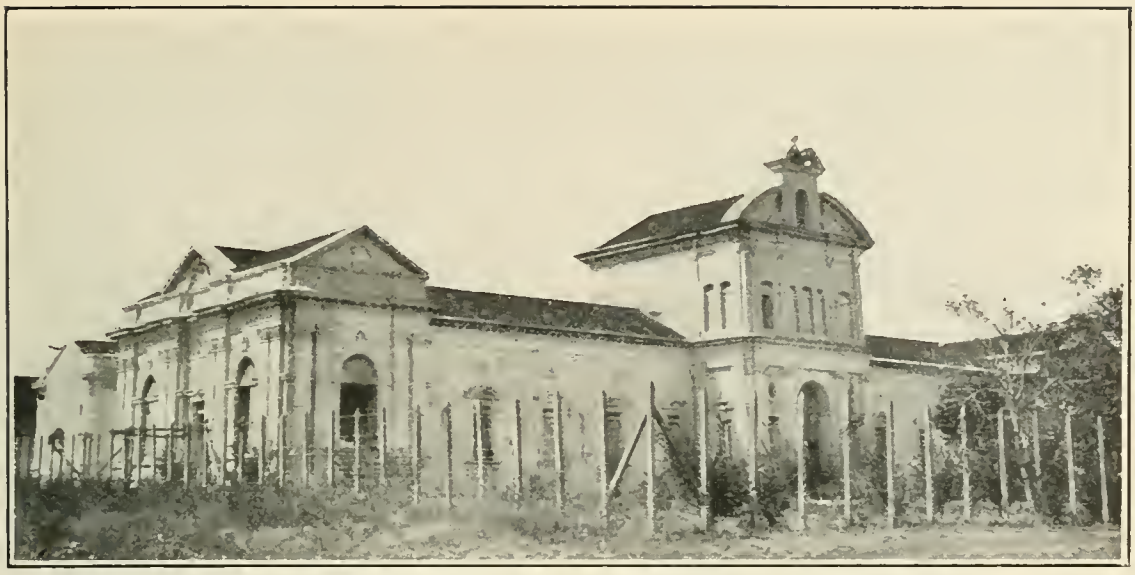
THE ENTRANCE AND A CORNER OF THE CEMETERY AT MASAYA, NICARAGUA.

Along the main street to within a few minutes' walk from the water front runs the railroad, and here you entrain for the capital city. What the physical equipment of the railroad may lack in excellence is amply compensated for by the fact that the train starts on schedule time and is invariably certain to arrive on the dot. This road is the only railroad in the country, starting at Corinto and running inland to Granada and Diriamba, its other termini, a distance of about 170 miles.

The trip to the capital is a pleasant revelation of the character of the country. Leaving the rolling waves of the Pacific, its shore bordered with the towering coconut palms and mangroves, you soon come upon the bank of a wide and deep inlet of the sea, the Paso de Caballos. Crossing this, areas of thriving sugar plantations stretch before you, the tall cane gently waving in the breezes. An hour's ride brings you near the Chichigalpa station, where flourishes one of the largest and greatest producing sugar estates in all of Central America. And now above the range of volcanic mountains which seems to hem in this section of the country rises Chinandega, seared and scarred by the fires of previous eruptions.

About 35 miles from Corinto you come to Leon, the largest city in the Republic—the distributing center for the coffee and mining districts of Matagalpa, Segovia, and Jinotega. There is considerable movement about the station. You jump into one of the coaches, and a drive through the wide and fairly level streets brings you to the main hotel—large, airy, clean, and comfortable. En route you observe the many quaint low homes thrown into contrast here and there by a larger and more elaborate structure. Leon is a busy city of 60,000 people. It has a number of fine public buildings, a law and medical school, a number of attractive clubs, and life in that city is as enjoyable as it is charming. While it does not boast of the picturesque surroundings and beautiful lakes of Managua and Granada, yet its position on the highway to the interior elevations and to the adjacent rich agricultural lands is responsible for its present size and prosperity.

Leon, it will be remembered, was a time-honored rival of Granada for the site of the capital, and so spirited did the contest for this honor frequently become that a compromise city had to be chosen, and the privilege of housing the National Government of the Republic fell to Managua. Leon boasts of one of the largest cathedrals in Latin America. Great and massive, it fronts one side of the plaza, and either side of the entrance steps is guarded by the lion of Castile. For over a century and a half this edifice has witnessed and withstood the historic trials of the nation. To-day as you gaze upon its huge façades, here and there showing the ravages of time and turmoil, your imagination gently roams back to the colonial days when the vast wealth and precious ornaments which the cathedral contained were proverbial, and you almost feel the "splendor and magnificence



VIEWS OF GRANADA, NICARAGUA.

Upper: One of the churches. Center: A market. Lower: A hospital.

SCENES IN NICARAGUA.

Upper: Drying coffee on plantation near Diriamba. Lower: A view of the town of Rama, on the Nicaragua River.

of those early days when the wealthy owners of great haciendas and gold mines lived here with a retinue of servants, their homes beautified with velvets and silks from Spain and their tables supplied with wines and sweetmeats." In and around Leon are many points that offer interesting fields for the antiquarian and archæologist. Old relics and ruins of stones, curiously carved pagan idols, altars, and shrines, are reminders of an older civilization that grew apace with the more modern one of colonial Spain.

After a pleasant stay at Leon you resume your journey to the capital. Once more you pass through flat grass lands interspersed with charming woodland. Here and there stretch before you expanses of cultivated areas. Presently Momotombo greets you, a beautiful volcano, erect, imposing, and constantly sending forth little volumes of smoke that pass off into white clouds as they ascend the skies. And then Managua! The drive to the hotel takes you through a large part of the city, and you get your first glimpses of the various public buildings, parks, homes, stores, and streets of the capital.

Managua lies on the south shore of the lake of the same name, a body of water covering 16 miles in width and over twice that in length. At some little distance away and connected by River Tipitapa is wonderful Lake Nicaragua, a sheet of water nearly 100 miles long and 40 miles wide. Little wonder then that with so advantageous a waterway route from the Atlantic to the Pacific, Nicaragua made such a strong bid for the canal that was finally built at Panama. But the passage of the treaty earlier referred to bears strong evidence to the fact that this location is still a desirable one, and in the humble opinion of the writer, it is not at all beyond the realm of probabilities that an increased world commerce, or vital economic or political reasons of an international character, may yet witness the construction of another interoceanic route over these waters.

At Leon you are impressed with the commercial activity of the city. In Granada you will observe a general liveliness in the life in general. The spirit of Managua is also distinctive. There is more of the quiet and dignity that befits a capital city. Among the public buildings worthy of special notice are the national palace, the President's palace, the offices of the other official departments, and the arsenal that stands on a hill overlooking the main street. The cathedral is quite modern in its style of construction and contains amongst its objects of interest a monument dedicated to Gen. José Dolores Estrada, the leader of the famous battle of San Jacinto. Central Park compares quite favorably with the recreation spots of Central America. The band concerts bring out the young and old, and the classic strains of the band may be heard for many squares under the quiet calm of a balmy tropic night. The park contains artistic flower beds, little statuettes, inviting benches, and there is

Photo by William V. Alford.

CUTTING SUGAR CANE.

The cultivation of sugar cane is one of the principal industries of the Republic.

Photo by William V. Alford.

A FIELD OF PINEAPPLES NEAR CHINANDEGA, NICARAGUA.

Courtesy of José A. Machado.

GENERAL VIEW OF MATAGALPA, NICARAGUA.

The city of Matagalpa, capital of the department of the same name, is located near the center of the country, and has a population of something over 5,000. Situated in the heart of the agricultural and grazing section of Nicaragua, it is rapidly growing in size and importance.

Courtesy of José A. Machado.

THE MUNICIPAL BUILDING AT MATAGALPA, NICARAGUA.

The offices of the Jefe Político, the governor of the Department of Matagalpa, are located in the building pictured above. Among other improvements the city installed in 1914 a waterworks plant and also a plant for electric lighting and power.

even a little booth where you may obtain some light refreshments and a cooling drink of a temperate variety.

From Managua you continue your journey a distance of 32 miles to Granada. This city of 35,000 people, sometime capital of the nation, is rich in historic events and still retains traces of that ancient glamor of romance which enveloped it in colonial days. True, little actually remains of the olden days, yet there is an indescribable something in the atmosphere of the city that is strangely reminiscent of its former grandeur. You see it in the private residences, which are larger and more pretentious than in the other cities; you feel it in meeting the many wealthy families who still reside in this vicinity, and you notice it in the charming spirit of friendliness and hospitality that the very place seems to radiate. Around the main park are a number of new buildings. The law school, the hospital, and fine public market are worthy of mention. The situation of Granada is itself picturesque. It stands near the shore of Lake Nicaragua and receives refreshing breezes from those waters. As if inclosing it is a series of giant volcanoes casting their dark shadows over the broad bosom of the sunlit lake. The country around and about abounds in luxuriant tropical vegetation. On the green-clad sides of the towering volcanoes are beautifully laid out coffee plantations. In the market place you are surprised and delighted at the abundance, variety and size of the fruits, flowers, and vegetables produced.

But Leon, Managua, and Granada represent only three of the larger cities of the country. There are others, too, which claim more than passing notice because of their importance in the agricultural and commercial aspects. For example, there is Masaya, claiming about 25,000 people, the center for the tobacco industry. Rivas, too, possesses both a stirring history and an active commerce. With its population of 14,000 it has developed in that Department flourishing cacao lands. The quality, moreover, of the bean grown here is said to be much superior to the grades usually exported, and for that reason over 80 per cent of the crop is consumed at home, where it receives higher prices than abroad. Matagalpa, with only a small population, varying from 4,000 to 5,000, commands attention as the chief coffee district.

Between Matagalpa and the Atlantic coast lies the bulk of Nicaragua's unexploited land, a vast expanse of fertile and well-watered territory. Cattle raising, gold mining, and timber cutting are possibilities which some day will add millions to the wealth of the country. Nicaragua's potential riches are great, its territorial expanse vast, its natural resources remarkable. Nicaragua has been hopefully looking forward to the future. To-day the treaty marks an epochal event in its economic progress, and all hail with satisfaction and hope the breaking of a new dawn.

GOING TO THE MOVIES IN SOUTH AMERICA[1]

MOTION-picture entertainments have become a most popular form of amusement all over South America. Indeed, in some of the smaller cities and towns the "cinema," as the show is generally called, is about the only diversion that draws the aristocrat and the artisan; the young and the old. In the leading cities of the continent the business has developed to enormous proportions, and, in many cases, new buildings have been designed and erected especially for this class of public amusement. In the different countries there are local conditions and tastes that affect the popularity of the business in its details; but in the main, the crowds, their likes and dislikes, time of attendance, musical phases, etc., are much the same.

In Rio de Janeiro the best motion picture theatres do not follow the custom of allowing patrons to drop in and out at will. A film is advertised to begin at a certain hour of the afternoon or evening; at the appointed time doors are closed, or in most cases a heavy and highly decorated curtain is dropped, and the show in the auditorium begins its functions. A rather novel arrangement, also noted in other Brazilian cities, is the waiting lobby immediately in front of the entrance proper. After purchasing a ticket the patron enters the lobby or corridor, takes a comfortable seat and waits until the termination of the first section of the play, the time of which may be a few minutes or half an hour. While waiting one may listen to the band of music, which may be heard equally well by those within the lobby or in the audience. At times the crowds become congested, and all the lobby seats are occupied; in such cases the ticket seller withholds further admissions and the crowd remains upon the street, but the brilliant electric lights (if night) and the music of the band continue to swell the number of waiting patrons.

In most of the larger cities of South America the motion-picture theaters represent a considerable outlay of capital. If they have not been constructed especially for this class of business, they are in most cases buildings that have been remodeled and modernized, and elegance and attractiveness are leading features. In recent years some of the finest playhouses have thrown open their doors for moving pictures, a fact that permits the humble citizen to get within the marble palaces of amusement that adorn most South American capitals. The opera is always beyond the financial reach of the average

[1] By William A. Reid, Pan American Union staff.

AVENIDA RIO BRANCO, RIO DE JANEIRO

Along this broad avenue are located some of the most beautiful motion-picture theatres to be found in South America. By night or day the street is an animated scene and the "movies" are well patronized by all classes of citizens.

SCENE IN A SECTION OF THE DEPARTMENT OF IMMIGRATION, BUENOS AIRES.

The Argentine Government has perfected an excellent system of caring for the thousands of immigrants that reach her borders. They are entertained a week free of charge at the Immigrants' Hotel. One of the phases is a series of motion-picture shows, depicting life upon the pampa, where the immigrant is soon to make his home.

A SCENE IN CORRIENTES, IN THE NORTHERN PART OF ARGENTINA.

The fine edifice on the right with the big flag sign is the new "cinema" and vaudeville theater. The climate of this section is very pleasant, and provisions for out-door seating and refreshments are also shown by the railed space adjoining the theater.

resident, and the advent of the "cinema," especially when held within the best theaters, proves doubly attractive.

After attending motion-picture shows and mingling with theater crowds in scores of cities and towns of nine countries of South America the writer returns fully convinced that such diversions and amusements are quite as popular with the Latins, if not more so, than with the people of the United States. Considering the larger cities only, there may not be as many "movies" as existed four or six years ago; the vast number of these amusements that sprung into existence overnight, so to speak, had their short life of popularity and then passed to oblivion. As a rule the majority of those quickly erected and poorly arranged houses or old houses rearranged for motion-picture crowds soon ceased to be attractive to the better classes; they were avoided for the newer and cleaner theaters that were gradually springing into the limelight of popular favor.

To-day, however, the city people are not the only ones who enjoy the motion-picture show; the business has made its way to the smaller town and even to the hamlet, where the amusement appears to be just as popular as in the great city. Furthermore, the town often lacking other forms of public entertainment, depends solely on the motion-picture for diversion. In not a few cases the most attractive place in the growing town is the new building or theater where the movies are shown.

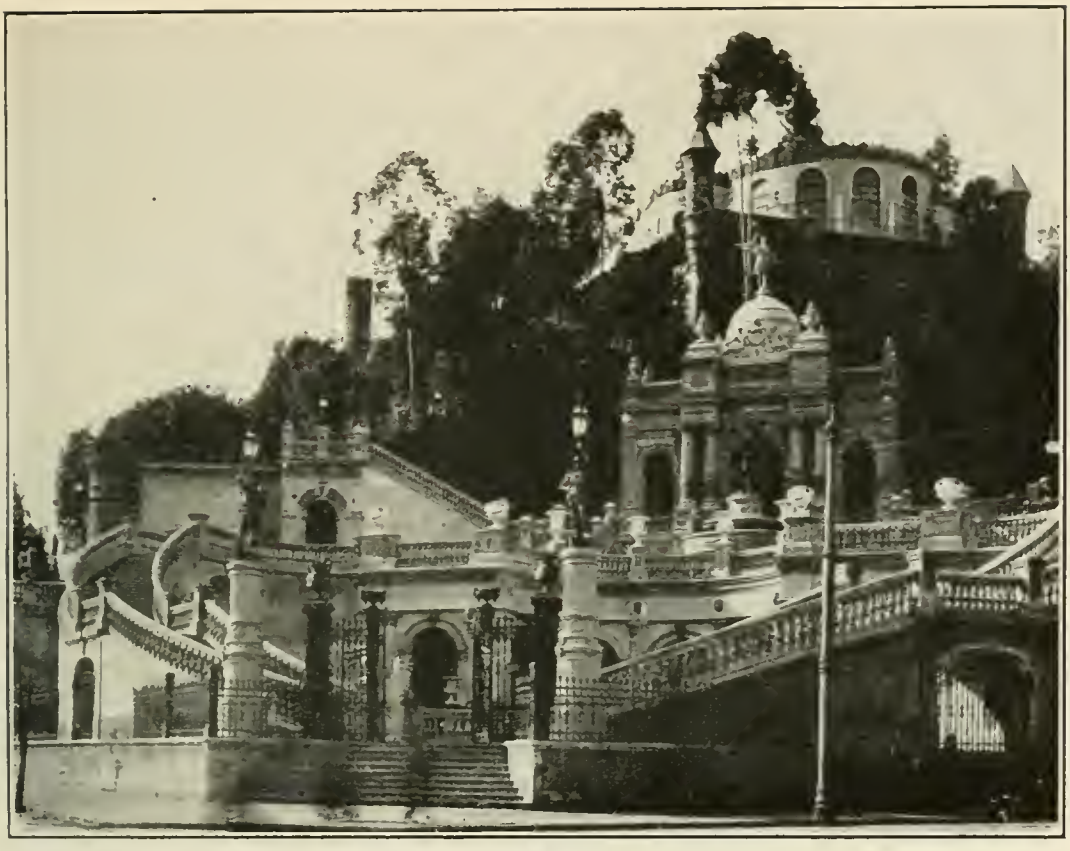
In numerous theaters, like those in Sao Paulo, La Paz, Mendoza, etc., the orchestra and orchestra circle, as known in this country, are used as cheaper seating space, and the higher-priced chairs or seats are arranged around and slightly above the first floor. Boxes of course are numerous in South American theaters and are eagerly sought by those able to occupy them.

Glittering uniforms of employees are always in evidence at the best motion-picture houses of the several countries. One massive moving advertisement especially remembered by the writer is a good-looking man, 7 feet in height, clad in a brilliant uniform, who stands before a theater in an Argentina city. His enormous proportions and pleasant manners are well known among the patrons of the house, and even foreigners have cause to remember "el hombre muy alto" at the cinematograph.

Scenes and pictures that please the average South American audience would probably not be popular in the United States, and vice versa. A great motion-picture play was recently shown in Buenos Aires daily for some weeks. It was called the "Nobleza gaucho" (noble cowboy), and it is safe to say that a very large percentage of people of the city saw and admired the exhibition. Films and scenario were Argentine productions, and finer work or more beautiful scenes could scarcely be imagined. The work depicted the wild,

A SUBURB OF MONTEVIDEO.

Here is depicted a section of one of the numerous suburban resorts of the capital of Uruguay. Motion pictures form one of the principal amusements at this charming spot, called Playa Capurro.



VIEW IN SANTIAGO, CHILE.

The hill of Santa Lucia is one of the very popular resorts of the Chilean capital. It rises many feet above the city, and in the evenings the motion picture, dancing, and music make the place especially attractive. The illustration shows the main entrance: the motion pictures are shown just beyond the house that crowns the hill.

NATIONAL THEATER BUILDING IN ASUNCION, PARAGUAY.

The motor truck and its usefulness were recently demonstrated in this city. A few days later the movements of the truck were thrown on the motion-picture screen—a fact illustrating the quick work of the native "movie" man.

free life of the pampas and brought out many of the noble traits of the men and women whose life is spent in the great outdoors. Three-fourths of this film would charm an American audience, but the latter section would hardly be popular in this country. On the other hand, some of the pictures which have proved drawing cards in the United States have been almost failures as regards appreciation before South American audiences.

In many sections the American film is growing into popular favor, for the reason that the producer is devoting time and attention to the study of what the Latin temperament likes and demands for amusement. Some of our early efforts in supplying film service to South America proved thoroughly unsatisfactory and were abandoned. European films and especially the French make, have been more popular with the average South American audience. One of the reasons is, that the people are always interested in French styles, and of course many of the characters seen in the pictures are attired in the latest Parisian fashions. This fact is also quite as pleasing to the men as to the ladies; and probably nowhere in the world does dress play a more important rôle in one's social standing than in the cities of South America.

At present the films that portray various phases of the European war are very popular all over the continent; probably even more so than in the United States, for the reason that from the cosmopolitan population of the larger cities hundreds or thousands of young men have been recruited. Anything, therefore, that can bring home to the wives, mothers, fathers, and sweethearts a story of loved ones at the battle front is eagerly awaited.

The price of the film from the United States is usually higher than the same article received from Europe; furthermore, it requires a longer time to procure it from a North American house; the shipping facilities, even during war time, being less convenient than European service.

In Brazil, which is somewhat typical of other countries, the import duty on films is about $5.50 per pound; while an average motion-picture machine costs approximately $30 to bring it into the country. To the above amounts must be added certain smaller taxes, stamps, broker's fees, etc., all of which act as a check against more active importations. Accordingly, the admission fees to the shows must be higher than in the United States; 25 to 75 cents is not an uncommon change. In a new motion-picture theater in Rosario, Argentina, the writer paid 42 cents for a ticket which was good for only an ordinary seat; a box seat in the same house was quoted at $1.27, in addition to the general admission. In other cities the admission to ordinary class houses is from 15 cents up, and nowhere was the price of admission as low as 5 cents, so common in this country.

A HOLIDAY CROWD ON THE ALAMEDA, LA PAZ, BOLIVIA.

Motion-picture theaters are very popular in the Bolivian capital, especially on holiday occasions. In the distance on the right of the picture is a new hotel called "The White House"; on the left, but not shown in the illustration, stands one of the new motion-picture houses, where hundreds are entertained daily.

A MOTION PICTURE CAMERA MAN AT WORK OFF THE COAST OF PERU.

Of the many movements for making the peoples of the Americas better acquainted, the motion picture is playing an important part. The operator shown in the illustration is preparing to bring bird life of the Peruvian coast before audiences in the United States.

Buenos Aires, where there are several large distributing agencies, is the headquarters for films and motion-picture machines for many other cities and towns. Asuncion, Paraguay, for instance, receives practically all of its films from the Argentina capital. They are shipped by river steamer (water being cheaper than rail), packed in tin, in an outer box made of wood; it requires 9 to 15 days for the round trip, including service at the playhouses in Asuncion. In the latter city the theater managers pay more or less $500 a month for a service of about 4,000 feet of film per day. In Montevideo, where films can be received overnight from Buenos Aires, the rental service is about $100 less than the charge to Paraguay.

One of the most practical uses to which the motion picture is applied in South America is the service at the Argentine Immigration Bureau in Buenos Aires. In normal times that country receives about a thousand immigrants per day; these people are kept a week at Government expense at a well equipped immigrant hotel, and during their sojourn a series of motion pictures not only entertains but instructs the newcomers in the agricultural activities of the country, shows them glimpses of home life on the vast pampas where they are soon to be located, and otherwise imparts general information that the immigrant should know. Thus, by means of the moving picture he forms a fair idea of his adopted homeland and, in a way, sees his future possibilities more clearly than could be explained in any other manner.

In one leading church in the Argentina capital the writer found a good moving picture outfit. It was operated at frequent intervals, showing mainly educational and religious subjects; and judging by the immense gatherings of children clamoring for admission, which was free, the innovation was proving popular, and the young minds receiving lessons and uplift stories that can never be forgotten.

The café and the open-air theater have always been popular in South America, and the advent of the motion picture has added to the attractiveness of such resorts. It also affords the vaudeville artist a slight breathing spell and permits him to extend his circuits, covering more of the smaller places than formerly. In many sections the warm climate makes it possible to continue outdoor amusements during the entire year, and the summer garden with its moving picture performance is well patronized. Para, at the mouth of the Amazon, furnishes a good illustration; there some of the theaters have open sides, the roof protecting the audience from the sun or rain and the absence of closed sides affording free ventilation.

The custom of the Latin is to keep late hours, and the evening motion-picture show rarely begins before 9 p. m. In the better class of homes the hour for the evening meal is about 7.30 or 8 o'clock; and even when the show begins at 9 o'clock there are usually late arrivals. If the theater caters to afternoon crowds, the popular hour

ONE OF THE NUMEROUS SUBURBAN MOTION-PICTURE THEATERS OF LIMA, PERU.

The Peruvian capital has a number of beautiful theaters and in these the motion-picture play is to be enjoyed. The illustration shows one of the cheaper structures where the humble citizen may see the show.

is about 5 p. m.; this entertainment closes sufficiently early for the patron to reach home in time for dinner. The afternoon is the special time for ladies and children to attend the shows without the male members of the family; for in most Latin countries the lady rarely goes upon the streets at night unaccompanied. The night is the most popular hour for the crowds, as at that time the whole family turns out, and everyone who can afford an automobile presses it into service. At one of the best motion-picture houses in Buenos Aires the writer counted more than 200 machines drawn up in lines awaiting the closing of only an average attraction. The hour was near midnight and about as much ceremony was observed as if the finest opera company had been the star performers.

Generally speaking, the South American will remain through the entire program of a performance, which may be of two or more hours' duration. Those who have not secured tickets for the full show may remain in their seats and secure additional ones from the ushers who pass freely among the patrons, or procure them at intermission, which occurs about twice during a long bill.

In visiting South American playhouses as well as attending open-air fetes, one sees among others the following European films: Gaumont, Pathé, Cineo, Nordisk, Messter. Of American films the following have found more or less popularity: Selig, Edison, Eclipse, Kalem, Vitagraph, Lubin, Thanhouser, and several other makes. It seems needless to say that Sunday is the most popular day of the week for the motion-picture business all over South America; many persons do not work on that day, and consequently the crowds are more easily gathered, and the same reels may be exhibited four or five times a day.

The motion picture is destined to perform a far greater service than simply amusing the people; it is carrying education to the masses all over South America, as in other lands. The educational film, however, has not yet been so extensively used in public amusements and educational institutions as in the United States. In the latter almost every phase of education has been to a greater or lesser extent touched upon. For instance, thousands of children as well as adults in America are familiar with the common housefly and its dangers to the community; they have been taught largely by the motion picture, with the result that every child is an enemy of the fly and knows the best methods of exterminating them. Were the fly film exhibited as extensively in South America as in North America the good results would be incalculable.

The fly film, the making of paper, irrigation methods, a modern dairy and pure milk, highway building, public baths, city markets, methods of street cleaning, recreations and amusements, garbage disposal, the manufacture of steel, and hundreds of other films of known educational value could be more extensively distributed in South America to the advantage of all concerned.

THROUGH SOUTH AMERICA'S SOUTHLAND[1]

"As the Spanish proverb says, 'He who would bring home the wealth of the Indies must carry the wealth of the Indies with him,' so it is in traveling; a man must carry knowledge with him if he would bring home knowledge."—Johnson.

ANOTHER valuable addition to the really worth-while literature dealing with South America has just come from the press. From its title, "Through South America's Southland," one would naturally infer that it is a book of travel and description—and so it is; but it is also much more. It is history, it is poetry, it is romance; again, it becomes biography, philosophy, sociology, and economics in turn and then—presto!—we turn a leaf or two and find that it is also geography, botany, and zoology. And with it all, in every phase of its kaleidoscopic versatility, it is not only instructive and interesting but positively delightful reading. A broad culture and extensive knowledge could have produced much of it, but not all; for its greatest charm consists in its serene optimism, its large charity, its generous sympathy, and in its delightful way of seeing and revealing only the best in men and things. Its author must be not only a scholar and savant, but a broad-minded humanitarian as well, for evidently the guiding sentiment in the production of this book has been

> "The faults of our brothers we write on the sands,
> Their virtues are inscribed on the tablets of love and memory."

Certain it is that every Latin American who may chance to read it must needs confess that there is at least one distinguished "Norte Americano" who is "muy simpatico." This notwithstanding the fact that the Rev. Father Zahm was born in the United States and is not of Latin ancestry. The explanation of his sympathetic understanding of the Latin character and of his appreciation of the fine qualities of the people who have developed in the great southern continent may be found in a personal and intimate acquaintance which began a third of a century ago. It is brought out in the foreword to his book, where he writes:

It is now three and thirty years since duty first led me to our sister Republic of Mexico. The interest which I had previously felt in the achievements of the Conquistadores was greatly enhanced by my sojourn among their descendants, in the valley of Anahuac, and has since continued to grow with the passing years.

[1] "Through South America's Southland," by the Rev. J. A. Zahm, C. S. C., Ph. D. (H. J. Mozans). Author of "Up the Orinoco and Down the Magdalena," "Along the Andes and Down the Amazon," "The Quest of El Dorado," etc. New York and London. D. Appleton & Co. 1916. 526 pages and 65 illustrations. Price $3.50.

Photo by Buck.

THE REV. JOHN AUGUSTINE ZAHM, C. S. C., PH. D.

The Rev. J. A. Zahm, provincial of Order of Holy Cross in the United States, was born in New Lexington, Ohio; graduated with degree of A. B. from University of Notre Dame, Indiana, in 1871; received degree of Ph. D. from Pope Leo XIII in 1895; entered Order of Holy Cross in 1871, becoming director of same in 1875. For years as curator of the Notre Dame Museum and as a lecturer on scientific subjects he has been widely known throughout the United States and Europe. In addition to various religious works he is the author of "Up the Orinoco and Down the Magdalena," "Along the Andes and Down the Amazon," "The Quest of El Dorado," and, finally, of the work reviewed in this number of the Bulletin, "Through South America's Southland."

VIEW OF RIO DE JANEIRO FROM THE SUMMIT OF CORCOVADO.

"Far beneath us is the radiant city of Rio de Janeiro, held in the heart of the woods. The homes of its people glow with gold melting into the green of gardens and parks. The Bay of Guanabara glimmers with silver, while its palm-covered inlets along the shore are liquid mazes of turquoise and aquamarine. The islands that sleep in its tranquil bosom seem veiled in a flickering haze tinged with green and gold. Ships of all sizes are seen creeping into the harbor from the broad Atlantic and saluting other craft that are slowly gliding out into the ocean's immense expanse." (From "Through South America's Southland.")

Since this first visit to Mexico other duties, coupled with special research in the religious, educational, and social condition of the peoples of Latin America, have led to my following in the footsteps of the Conquistadores from the Strait of Juan de Fuca to the arid plains of Patagonia and from the source of the Amazon, in the Peruvian Cordillera, to its broad estuary 4,000 miles distant. Thus, through a strange combination of circumstances, I have been—

> "A palmer, as ye se,
> Whiche of my lyfe much part have spent
> In many a fayre and farre cuntrie,
> As pilgrims do of good intent."

Not only does the book evince the author's knowledge of the present conditions of the countries and people of whom he writes, but it also reveals a profound study of their history and of their literature. When dealing with Brazil he embellishes his descriptions or supports his statements with apt quotations from original Portuguese sources, showing a broad knowledge of the history and literature of that Republic. When he writes of his sojourn in Buenos Aires and other Argentine cities or localities of historic interest, a similar familiarity with the history and literature of Argentina as well as of Spain are made manifest. In regard to the Republics of Chile, Uruguay, and Paraguay the same competent knowledge is displayed, while with it all is happily mingled a remarkably diversified store of information gathered in many years of study and travel. Yet there is not a pedantic or bombastic line in the entire book; nothing to show that the author is even conscious of possessing unusual erudition. His story is all told in a genial, happy vein, in English that is classical in its purity and forcefulness. His descriptions are at times so beautiful in thought and expression that they verge on pure poetry, and might easily be transformed into blank verse. As an example may be cited his pen picture of the beautiful Bay of Guanabara (often called the Bay of Rio de Janeiro) as Col. Roosevelt and he saw it in the early dawn of the morning of their arrival:

> We were in the midst of a vast amphitheater formed by mountain ranges and lofty peaks that pierced the clouds. Directly ahead of us, lapped by the myriad tongues of the bay, was the fair city of São Sebastião de Rio de Janeiro. Behind it rose in serene majesty the forest-clad mountain of Tijuca, and still farther to the west was the celebrated range of the Serra dos Orgãos. It is so called from its fancied resemblance to the pipes of an immense organ. In places it is more than 6,000 feet high. The sharpest and most striking pinnacle of the Organ Mountains is called Dedo de Deus (Finger of God).
>
> The mountains surrounding the city were enveloped in clouds when we first entered the bay, but the rising sun soon cleared up the atmosphere, and then every detail of mountain, bay, and city came out in glorious relief. Then, in the dreamlike radiance of the morning, the panorama before us revealed itself as one unbroken line of perfectly modulated landscape. In every direction were the most charming vistas of green and gold. The bases and flanks of Tijuca and the towering summits of the Serra dos Orgãos were bathed in the luminous rays of the tropical sun, which suffused everything with wonder and beauty and transmuted them into visions of ineffable

VIEW OF POCITOS, MONTEVIDEO'S FASHIONABLE BATHING RESORT.

It is at Pocitos that not only the elite of Montevideo congregate, but also many of the first families of Buenos Aires come here to enjoy the sea breezes and fine bathing beach during the warm season of the year. In addition to the hotels, there are many handsome and artistic villas, and all are crowded during the summer.

A SALADERO OR JERKED BEEF PLANT IN URUGUAY.

Saladeros is the name given to those establishments in Uruguay that prepare *tasajo*, or jerked beef, of which Father Zahm writes: "These require more than half a million cattle a year. The chief markets for this product are the same as for that prepared in Rio Grande do Sul— viz, Northern Brazil—although a considerable amount is also shipped to Cuba, Porto Rico, and certain of the Portuguese colonies. The importance of this industry can be realized when it is known that the amount of dried beef exported each year amounts to about 50,000 tons."

splendor. The waters of Guanabara seemed to have all the reputed tints of the dying dolphin, for their colors changed with every movement of the clouds, with every reflection of the sun's rays from the rapidly disappearing vapors which had surcharged the soft, warm atmosphere of the morning. Everywhere they quivered with romance and with the golden charm of fairyland.

The color notes of mountain, and bay, and island struck a pleasant harmony with the exquisitely tinted lines of the city beautiful cradled between the evergreen foothills of Tijuca and the resplendent waters of Guanabara. Even at a distance, Rio de Janeiro seems a city of gardens. The prevailing tone of its embowered villas and sun-stained palaces and churches is a pearly white, passing, by delicate gradations, into light orange and primrose. The city, indeed, is as unique as its setting. The first view of it fully justifies all that can be said in its praise.

The harbor of Rio de Janeiro has frequently been compared with those of other world-famed cities. But it is so far beyond all others in scenic beauty, in the gorgeous pageant of mountains and hills with their delicately drawn outlines, in its lovely bays and its century of islands tinted with the most exquisite aerial hues, that comparison is quite out of place. Not Naples so famed in song and story; not Vigo with its garland of islands and mountain peaks; not Palermo with its Conca d'Oro surmounted by Mount Pellegrino; not Sydney with its island-studded bay; not Constantinople with its Golden Horn crowned by minarets and mosques, can offer anything that so rejoices the eye and so satisfies our ideal of supreme beauty in nature as does the peerless Bay of Guanabara.

This is the harbor of Rio de Janeiro as seen from the steamer deck. Later the author views the beautiful city from the top of Corcovado, whose peak rises to an altitude of nearly 3,000 feet, located in the very outskirts of the city itself. The entrancing beauty of the scene is such that it calls forth the very best of Father Zahm's descriptive powers; and this reviewer can testify from personal experience that the following picture is not overdrawn:

The summit of Corcovado is provided with a graceful open pavilion (Chapeo do Sol) and a stone balcony, where one finds a prospect that at once enthralls attention and excites emotion even in the breast of the most blasé world roamer. Far beneath us is the radiant city of Rio de Janeiro, held in the heart of the woods. The homes of its people glow with gold melting into the green of the gardens and parks. The Bay of Guanabara glimmers with silver, while its palm-covered inlets along the shore are liquid mazes of turquoise and aquamarine. The islands that sleep in its tranquil bosom seem veiled in a flickering haze tinged with green and gold. Ships of all sizes are seen creeping into the harbor from the broad Atlantic and saluting other craft that are slowly gliding out into the ocean's immense expanse. Tijuca and the Serra dos Orgaos are still draped in the delicate white mist of the morning, but, under the magical action of the sun, it is soon dispersed into a sparkle of opal and topaz. Through the climbing valleys that are seen on every side there are marvelous harmonies of color—of emerald and sapphire, of amber and amethyst. Light and shadow play almost mystically over the landscape. A delicate, drowsy languor seems to hang upon the city—the home of happy shadows and dancing sunbeams. It is like one of the glorious dreams of Titian, one of the superb visions of Turner.

Be it remembered, in passing, that Father Zahm was a member of Col. Roosevelt's party when the latter made his tour of South America in 1913, which ended with the Roosevelt-Rondon Scientific Expedition into the wilds of Brazil, resulting in the fluviatile survey and mapping of the now celebrated Rio Teodoro, erstwhile the

VIEWS OF BUENOS AIRES.

Upper: "As seen from the tawny estuary of the Rio de le Plata, Buenos Aires is not unlike Chicago as viewed from Lake Michigan. One can see but little of it, except the part adjoining the immense docks, which, although but recently constructed, rival those of Liverpool and Antwerp." Lower: A night view of the Plaza de Mayo on a festive occasion.

Photo by Brown & Dawson and E. M. Newman.

THE SPANISH MONUMENT IN BUENOS AIRES.

Just before entering Palermo, the magnificent park which is to Buenos Aires what Central Park is to New York, at the end of the Avenida Sarmiento, is this beautiful monument, donated to the city by the Spanish residents of the Republic as a mark of their esteem and affection for the country of their adoption. It is the work of the celebrated sculptor Arturo Dresco, and cost nearly $90,000. It was not completed until the latter part of 1915, and is regarded as one of the most artistic monuments in all South America.

"River of Doubt." How Father Zahm came to be a member of the party is told by Col. Roosevelt in his "Through the Brazilian Wilderness" as follows:

One day in 1908, when my presidential term was coming to a close, Father Zahm, a priest whom I knew, came in to call on me. Father Zahm and I had been cronies for some time, because we were both of us fond of Dante and of history and of science. * * *

On the occasion in question Father Zahm had just returned from a trip across the Andes and down the Amazon, and came in to propose that after I left the presidency he and I should go up the Paraguay into the interior of South America. At the time I wished to go to Africa, and so the subject was dropped; but from time to time afterward we talked it over. Five years later, in the spring of 1913, I accepted invitations conveyed through the Governments of Argentina and Brazil to address certain learned bodies in these countries. Then it occurred to me that, instead of making the conventional tourist trip purely by sea round South America, after I had finished my lectures I would come north through the middle of the continent into the valley of the Amazon; and I decided to write to Father Zahm and tell him my intentions. Before doing so, however, I desired to see the authorities of the American Museum of Natural History, in New York City, to find out whether they cared to have me take a couple of naturalists with me into Brazil and make a collecting trip for the museum,

Accordingly, I wrote to Frank Chapman, the curator of ornithology of the museum, and accepted his invitation to lunch at the museum one day early in June. At the lunch, in addition to various naturalists, to my astonishment I also found Father Zahm, and as soon as I saw him I told him I was now intending to make the South American trip. It appeared that he had made up his mind that he would take it himself, and had actually come on to see Mr. Chapman to find out if the latter could recommend a naturalist to go with him; and he at once said he would accompany me.

And thus it happened that Father Zahm became Col. Roosevelt's companion on this now famous journey—a journey which has given two valuable contributions to our literature on South America, Col. Roosevelt's "Through the Brazilian Wilderness," and the book which is the subject of this review.

In regard to the scope of his account of the scientific expedition and of his narrative anent the countries and cities visited before the expedition proper really started, Father Zahm writes:

The scientific results of this expedition have been given by my distinguished associate in his interesting work, "Through the Brazilian Wilderness." For this reason, I have in the present volume confined myself, almost entirely, to a narrative of the incidents of our journey and a description of the places which we visited together. In this, as in my preceding books on South America, I have had little to say of the material, political, or economic conditions of the countries through which we journeyed. These subjects have frequently been discussed by statisticians and specialists. My interests have been rather in the history, the poetry, and the romance of the places visited. For, with the exception of Spain, the motherland of the great explorers of, and adventurers in so much of the Western Hemisphere, there is no land in the world which is so glamouring as that vast region which witnessed the brilliant feats of arms and the marvelous achievements of a Cortes, a Quesada, a Pizarro, a Valdivia, an Alvar Nuñez Cabeza de Vaca. Nor is there another land which casts such a spell on the traveler who has read the life story of these marvelous men, whose ardent vitality and generous enthusiasm impelled them to undertake and to achieve what less courageous natures would have deemed impossible.

THE RAILROAD CLEARING HOUSE BUILDING, BUENOS AIRES.

One of the largest steel structures of the Argentine capital is the Railroad Clearing House Building. It is 13 stories in height, and, like several other steel "skyscrapers" of Buenos Aires, was erected by a well-known steel building company of New York. Something over 1,500 tons of steel went into its construction. In architectural design, as well as in its interior details, it is a fine example of the modern office building.

Thus it is that we find in his book charming descriptions, valuable historical information, graphic pictures of scenes and incidents, and comments which reveal a profound knowledge of racial characteristics and of nations still in the formative period. A few paragraphs, selected almost at random, will serve to show the general tenor of the work.

From Brazil the party traveled by railway into Uruguay. After a vivid description of the country through which the train passed, the author pictures Montevideo, the progressive and modern capital of the country, as follows:

Montevideo is the youngest of South American capitals and has an air of modernity about it. A metropolis of about 400,000 inhabitants, it everywhere manifests enterprise and prosperity. But, although everyone is busy, no one seems to be in a hurry. Business is transacted quietly and expeditiously, without any of that feverish haste that characterizes so many large shipping centers in other parts of the world.

Most of the public buildings are models of architecture. Many of them seem to be almost reproductions of some of the palatial structures of Paris or Vienna. A large number of the educational buildings would do credit to any city in Europe or the United States. Among those that particularly attracted our attention were the university, the school of medicine, the Atheneum, the diocesan seminary, the chemical laboratory, the hygienic institute, and several schools for secondary instruction. Then there is the large convent school of the Silesian Sisters. The work accomplished by these devoted religious in the instruction of poor children deserves all the encomiums lavished on them by the people of Montevideo. The charitable institutions likewise merit special mention. In few places are better provisions made for the poor and the sick, for the insane and the foundling. But this care of the helpless and suffering is characteristic of the people of all parts of South America. They are as charitable as they are hospitable, and, as every traveler knows, there are no more hospitable people in the world.

And yet, although the public buildings of Montevideo are in many respects so remarkable, I was much more interested in the homes of the people, especially those located in the city's suburbs. Here one finds even greater varieties of architecture than in São Paulo or Rio de Janeiro. There is every type of dwelling from an Indian bungalow and a Swiss châlet to a Moorish or a Venetian palace. All combine beauty with comfort and convenience and frequently with luxury.

But the gardens and the flowers! Never have I seen in any part of the world such marvelous exhibitions of flowering plants and shrubs, native and exotic, as are found about the homes and quintas of the Montevideans. They surpass in profusion and exuberance even those of Rio de Janeiro, and that is saying very much indeed. California is justly famed as a flowerland. So is the French Riviera; but I have never seen in either of these favored regions of flora such gorgeous displays of bloom as I have witnessed in and around Uruguay's magnificent capital. With backgrounds of palm, orange, myrtle, magnolia, bamboo, mimosa, alternating with the native paraiso and ombú trees and the Australian eucalyptus, one finds beds of pansies, carnations, marguerites, and lilies, together with hedges of lilac and guelder-rose and cineraria, while walls and houses are covered with multicolored draperies of wistaria, honeysuckle, Bougainvillea, and numerous other creepers of every form and hue.

It is, however, in their roses that the Montevideans take their greatest pride. They are found everywhere, in private gardens and in public parks, in clumps and hedges, trained to trellises and columns or falling in showers over walls and railings. But nowhere are they seen to such advantage as in the Parque Urbano and in the Passeo

SCENE ON THE ARGENTINE PAMPA.

"To-day, Argentina is the greatest sheep-producing country in the world, except, probably, Australia. In horses and cattle it is rapidly becoming a strong competitor of Russia and the United States. And, when one considers that but a small part of the territory available for grazing purposes is in actual use by stockmen, one can realize what an enormous increase there is sure to be in the pastoral industry of this part of the world when the vast areas, still unoccupied, will be covered with teeming flocks and herds." (From "Through South America's Southland.")

del Prado—those exquisite pleasure grounds of the national capital. Here there are no less than 800 varieties of roses collected from every clime. The rosebushes themselves number many thousands. The casual observer would say that there are myriads of them. They are distributed with the most exquisite taste and their care, as one sees at a glance, is for the gardeners a labor of love.

As I contemplated the superb rosaries of the Paseo del Prado, I recalled Virgil's graphic three-word reference to the rose beds of Pæstum, "*biferique rosaria Pæsti*," where the roses bloomed twice a year. It was of these same rose beds of Pæstum that Ausonius drew the charming picture:

> "Vidi Pæstano gaudere rosaria cultu
> Exoriente novo roscida Lucifero."

Who will indite to the roses of Montevideo sonnet or couplet fair as of old Ausonius sang of the roses of Pæstum? For the former are incomparably more exquisite, more varied than any bloom ever kissed by zephyr from Tyrrhenian sea and more worthy, too, of immortal verse.

To Buenos Aires the author devotes a chapter of 27 pages, and when the reader finishes it he is able to form a good idea of just what that splendid metropolis is like, what it has been, and what it promises to be in the future. Its history is summarized, its fine public and private buildings are described, its educational institutions, churches, charitable organizations, parks, pleasure resorts, its civic progress, and the character and aspirations of its people are all dealt with in a comprehensive manner. Its most striking feature, its modernity, is thus dealt with:

There is about Buenos Aires little of that glamour of romance that so distinguishes the capitals of Quesada and Belalcazar and Pizarro. This is not because Buenos Aires is younger than the three cities named, for it was founded by Mendoza in the same year as Lima and three years before Bogotá. Nor is it because the explorers and conquerors of the La Plata region were lacking in ability and achievement. No one would affirm that of men who contributed so much to the discovery and colonization of this part of the world as did Sebastian Cabot, Juan Diaz de Solis, Cabeza de Vaca, Irala, Ayolas, and Mendoza. But their deeds, great as they undoubtedly were, have never appealed so strongly to the imagination as the more brilliant achievements of the famous conquerors of the Incas and the Muiscas.

But in Argentina's great and enterprising capital everything is suggestive of the energy and the rush of the twentieth century. In certain of the business streets there is all the feverish activity of Wall Street in New York, and all the hurry and bustle of the Board of Trade district in Chicago. Every man one meets is preoccupied with business and the pursuit of wealth. There is here nothing of that *dolce far niente* which is so marked a characteristic of many other Latin American cities; none of that disposition to procrastinate, which is so well expressed by the word *mañana*—never do to-day what can be done to-morrow.

In his analysis of the racial characteristics of the people, and in answer to the question "But who is the Argentine?" he concludes his chapter on "The Argentine Pampa" with the following:

The truth is that the definitive type of Argentine is still in the making. What it will eventually be, after the peoples of the various nationalities which now compose the population of the Republic have thoroughly blended, it is difficult to predict. The process of fusion will naturally be less difficult than in sections where there is a

VIEW OF ASUNCION, CAPITAL OF PARAGUAY.

"The Ave bell, 'That seemed to mourn for the expiring day,' softly sounded from convent towers as our train slowly rolled into the imposing station of the Paraguayan capital, where a vast, acclaiming multitude had gathered to bid us welcome to Nuestra Señora de la Asuncion. I can not speak for my companions, but I can say that I personally was more eager to see this old, historic metropolis than any other city I had ever visited in the southern continent, with the exception of Lima, and possibly Cuzco and Bogotá. * * * It was because of the important rôle it has so long played in the history of the New World and because of the atmosphere of romance which has enveloped it since the days when the Conquistadores made it a place of refuge on their way to golden Peru, and the center of gravity of the southern part of the continent." (From "Through South America's South.and.")

large proportion of the black and red races. In Argentina there are now but few Indians, outside of the Gran Chaco and Patagonia, while the Negro is quite a negligible factor.

In speculating, then, on what will be the result of the fusion of the various types at present existing in Argentina we have to deal chiefly with the Caucasian race. * * * As has already been said, the great majority of the population consists of peoples of Latin origin. These readily assimilate with one another, by reason not only of the similarity of language, of literary and artistic traditions, but also of the identity of religion and general culture and ways of life. Until a half century ago, the population was almost exclusively of Spanish origin. Since then it has been notably modified by the vast influx of colonists from Italy, not to speak of those from other parts of the world. But the differences from the parent stock, which these people of Latin extraction exhibit in Argentina, are the result of local and historical causes rather than the commingling of native elements. As might be expected, the recent arrivals from Spain fuse more readily with the native-born inhabitants of the country than do the Italians. This is because of the sameness of language. But it is only a question of a short time until the Italians also will become absorbed into the native population.

What will be the resultant type of this fusion of Argentine, Spaniard, and Italian we can only surmise. For as yet we are without the necessary data for determining the effect of blood admixture on national character, or the influence of heredity and environment on a population composed of several different elements, like those in question. That the type will exhibit the best and most prominent traits of the component peoples there is every reason to believe. That it will possess the practical intelligence of the Spaniard, the individual energy of the Italian, the ardent and jubilant patriotism of the Argentine, the spirit of enterprise, the optimism, the civic idealism of all these three combined, there can be little doubt. That Argentina, after this fusion of peoples who have given to the world a Cervantes, a Murillo, a Calderon, a Dante, a Leonardo da Vinci, a Columbus, a Galileo, a San Martin, will eventually take a prominent place in literature, art, science, and statesmanship seems assured. * * * Blessed with a temperate climate, with a soil as fertile as any in the world, with unbounded resources awaiting development, with a peace-loving population and a government whose stability is almost guaranteed by the magnitude of foreign interests in the country, there is every reason why the Argentine Republic should realize her aspirations, and achieve a prominent place among the great nations of the earth.

One of the most interesting chapters of the book is that on "The Learned City," Cordoba, where is located the third oldest university in the Western Hemisphere, those of Lima and Mexico being the two that antedate it. It is in this chapter that we find much valuable historical matter dealing with the conquest of the country by the Spaniards and with the later period of Argentina's struggle for independence. Here, too, we find an interesting biographical sketch of Argentina's famous patriot-priest, Gregorio Funes, better known as Dean Funes, who drafted the constitution of the "United Provinces of South America," and played such an important rôle in the great revolution that gave freedom to a continent. In the chapter entitled "Famous Scenes and Victories" San Martin's heroic life, his remarkable feat of crossing the Andes to come to the rescue of the Chilean patriots, as well as other notable events in Argentine and Chilean history are outlined.

PALACIO DE BELLAS ARTES, SANTIAGO, CHILE.

One of the finest of the many handsome public buildings of Santiago is the new Palace of Fine Arts, of which Father Zahm writes: "It is not too much to say that, in architectural beauty, it far surpasses any similar structure in the United States."

"Santiago del Nuevo Extremo," "In Famed Araucania," and "Myth and Marvels" are the titles of the three interesting chapters which deal with Chile, its progress, its history, its people, and their splendid achievements. Lack of space prevents quotation of any of the descriptions of Santiago, its fine public and private buildings, its parks, and its institutions of learning, but the following paragraphs relative to the literature of Chile are especially noteworthy:

In connection with the educational work of Chile, I should like to say something regarding the art and the literature of this progressive country. But a large volume would be required to do even partial justice to these interesting subjects. I must, however, advert to the charming classic of the soldier poet, Ercilla, which led Andres Bello to declare: "Chile is the only one of modern nations whose foundations have been immortalized by an epic poem"—a poem which Cervantes, in his Don Quixote, declared to be "one of the choicest treasures of the Castilian muse." Several similar poems were written in Spanish America during the colonial period, but they are valuable rather as history than as poetry. Among them are the "Elegias de Varones Ilustres de Indies," by the poet-priest, Juan de Castellanos; "La Argentina," by Padre Barco Centenera; "Lima Fundada ó Conquista del Peru," by Peralta Barnuevo; not to speak of a number of others of less merit.

Not only is Chile unique among modern nations, in having its foundation glorified by a great epic, but it is also unique among the nations of the New World in having its literary genesis signalized by so excellent a work as "La Araucana." Although it is a product of Spanish genius, it is nevertheless so identified with the soil which the author trod as a Conquistador, and with the intrepid natives whom he admired and sympathized with, that it would be a grave omission not to salute the noble figure of Ercilla, especially when his poem served as the type of all those historical poems which were written in America or on America during the period of Spanish domination.

Ercilla's great historical poem was the beginning of that traditional love in Chile for historical researches which was never more pronounced than it is today. For, outside of Peru, whose long line of historians is headed by such distinguished names as the Inca Garcillasso de la Vega and Cieza de Leon, there is no country in South America which can count more active and intelligent workers in the fields of history and archæology than Chile. Aside from such noted historians as Molina, Rosales, Ovalle, and Olivares, whose productions belong to the colonial period, we have among recent and contemporary historians such eminent investigators as B. Vicuña Mackenna, R. Barros Arana, M. L. Amunategui, Crescente Errazuriz, T. Thayer-Ojeda, Carlos Morla Vicuña, Valdez Vergara, and Toribio Medina, the last of whom is doing for his native land what the late D. J. Garcia Icazbalceta accomplished for Mexico. It was this tireless and fruitful activity of Chilean historians that impelled the learned Spanish author, M. Menendez y Pelayo, to declare: "That there is not a corner in their history that the Chileans have not scrutinized, not a paper in their archives or in ours that they do not print and annotate. Chile * * * has more extended histories than that of Rome by Mommsen, than that of Greece by Curtius or by Grote." The imposing "Coleccion de Historiadores de Chile y Documentos Relativos a la Historia Nacional" and similar collections which have recently been published by the Chilean Government show that this statement is in nowise exaggerated.

The return journey from Chile was made via Talcahuano, the Republic's chief naval station, Concepcion, Valdivia, and various places in the Provinces of Valdivia and Llanquihue, across the

A VIEW OF THE BAY OF VALPARAISO, CHILE.

"Next to San Francisco, Valparaiso is, in wealth and importance, the leading port of entry on the Pacific coast. Most of Chile's import and export trade passes through this flourishing entrepôt. And yet few cities have suffered more reverses and disasters than Valparaiso. * * * In the appalling seismic convulsion of 1906 an untold number of lives were lost, while the property loss, at a conservative estimate, was not less than a hundred million dollars. But we could discern little trace of the last terrible disaster. Most of the ruins of the old buildings have been removed and their sites are now occupied by large and commodious structures. The march of progress was retarded for only a very short time. To judge from the present aspect of the city, from the throbbing life and feverish activity of its inhabitants, Valparaiso is now more vigorous and more enterprising than ever." ("Through South America's Southland," by J. A. Zahm.)

Andes, and thence over the plains to Bahia Blanca, Argentina's great southern port on the Atlantic. This journey was accomplished partly by railway, partly on horseback, by small lake steamers, by automobiles, and the last lap by railway from Neuquen to the seaport named above. The beautiful mountain and lake region through which a portion of the trip took them, the veritable "Switzerland of the Americas," again calls forth fine descriptive passages, such as the following pen picture of Mount Osorno:

Our first view of Osorno was entrancing. The landscape round about us was suffused with the glorious radiance of vernal sunshine. All nature was pulsing with the rapture of spring. A slight pearly mist hung over the placid waters of the lake. The balmy air was opaline in its transparency. Filmy, white clouds, like laces, diapered the blue sky. Masses of feathery vapor rose from the crater of the volcano and slowly floated away into space. The lower slopes of the majestically grand mountain were panoplied with shrubs and trees of rare beauty and luxuriance. As I contemplated the glory of this immense jewel of the Creator, the charm of its incomparably noble outline amid its lofty silence and supreme calm, I felt myself completely carried away by the enchantment of its irresistible spell. And I recalled the thoughtful words of Kant, who declares that "In the midst of a beautiful scene of nature, invaded by a full but calm sense of well-being, when his spirit is most open to moral instincts, there seizes man an imperious need to be thankful to some one." And to whom should our gratitude go out but to Him who has fashioned all these wonders of loveliness and sublimity?

From Bahia Blanca the party returned to Buenos Aires, remaining long enough to complete preparations for the long-planned expedition into the Brazilian jungle. "In Guaraniland," "On the storied Paraguay," "The home of birds and palms," and "Journeying in the jungle," are the four chapters which deal with the expedition and complete the book. They are replete with historical references and fine descriptive passages, of which the following, giving the author's impressions when he found himself for the first time on the broad and far-famed Parana, may serve as examples:

As I surveyed the landscape from the upper deck of our boat my heart fairly leapt at the splendor of the view. The broad emerald pampa and the palm-decked islands were bathed in the crimson rays of the setting sun. A delicious languor seemed to hang upon the air and a strange heavenly peace appeared to have fallen upon this enchanting spot. The broad panorama glowed with color and magic. The river was as silent and as motionless as a haunted mere. The stately palms, with their noble crowns, cast masses of shadow over the darkening waters, while the wild, untamed tangle of underbrush on both sides of the calmly flowing flood seemed to be the natural haunts of savage beasts and more savage men. Nothing could have surpassed the enthralling beauty of the evening with its gentle voices and subdued colors, with the mysterious shapes and movements of trees and islands as they disappeared in the dreamy distance with the rapidly approaching twilight.

Then night fell over the scene and a slight pearly mist, which had risen from the broad expanse of waters, drew over the face of the earth a tremulous veil of gossamer. But the dark-blue sky was spangled with stars and the rising moon, throwing a path of silver athwart the broad river, poured an opalescent sheen over the palm-crowned islands and flooded the mist-covered pampa with ethereal whiteness. We were seem-

IN FAR-AWAY PARAGUAY.

A crowd at the station at Villa Rica, waiting to greet officials of the Paraguayan Government.

ingly in a land of enchantment, but, in reality, we were in a region where legend whispers among the palm trees and trembles in the shivering wavelets of the moon-irradiated Parana. We were gliding over waters which witnessed the immortal deeds of Castilians and Adalusians of pure blood and high traditions—men who cast a glamor over everything they touched, and invested with romance all the scenes of their matchless prowess and brilliant exploits.

It was easy here to conjure up noted personages of the long ago. For the banks of the Parana are dotted with historic sites and teem with associations connected with discoverers and with the conquistadores. The Amazon, the Orinoco, and the Magdalena are famous in the annals of exploration and conquest, but they must all yield the palm to the great river of the south, which, under the varying names of the Parana, the Paraguay, and the Rio de la Plata, has witnessed more stirring exploits and far-reaching achievements than any other waterway in the Western Hemisphere.

History, legend, tradition, adventure, romance, drama, and tragedy—all play their parts in the author's story of Paraguay, while his account of the expedition into the wilds of Brazil and the meeting with the most primitive of aboriginal tribes, the description of their mode of life, their customs, and even their games, are of absorbing interest. Taken in its entirety, it is a remarkable work, and when one finally reaches the last page it is with a sigh of regret that the book is closed and that this delightful voyage into the lands of the old conquistadores comes to an end.

C. E. A.

ISLAND OF MARGARITA, VENEZUELA[1]

IT was my good fortune to spend the first part of the year 1915 upon the little known island of Margarita, lying off the north coast of Venezuela, in the interests of the Museum of the American Indian of New York City, which institution sent me to this region to make an archeological survey. The results of this survey have been set forth by me in one of the regular reports of the Museum of the American Indian, but as these reports are confined exclusively to the archeological and ethnological data gathered and are not of general interest, I think it may be of interest to the general public to know somewhat more of the geographical and physical aspects of the island of Margarita. The various handbooks on South America give but scant information about this island, and, strange to say, one finds a great deal more mention made of Margarita Island in the early historians of the sixteenth century, such as Las Casas, Herrera, Oviedo et al. than one does in more modern works. Without

[1] By Theodoor de Booy.

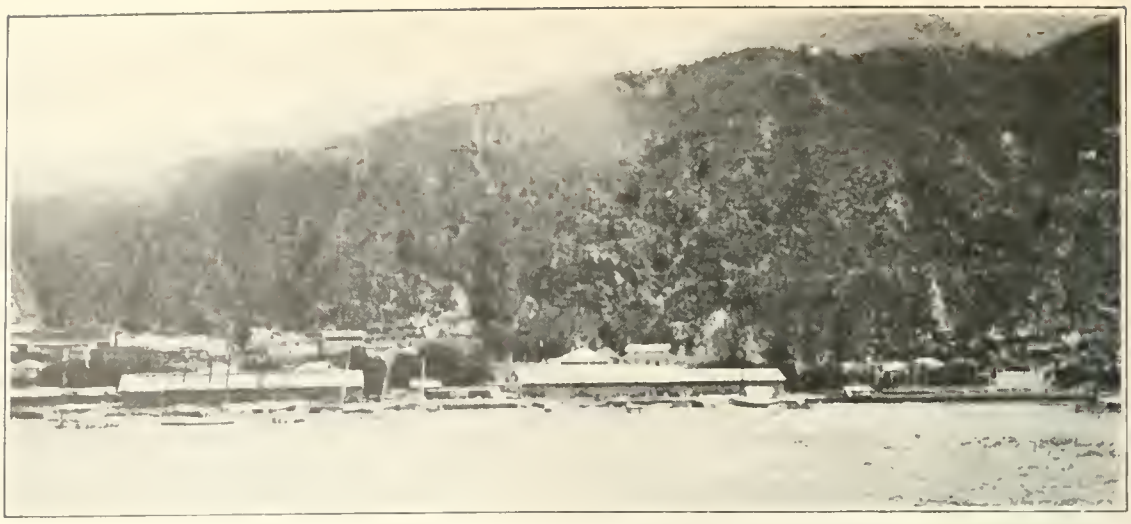


Photo by Franco, La Guaira.

VIEWS OF LA GUAIRA, VENEZUELA.

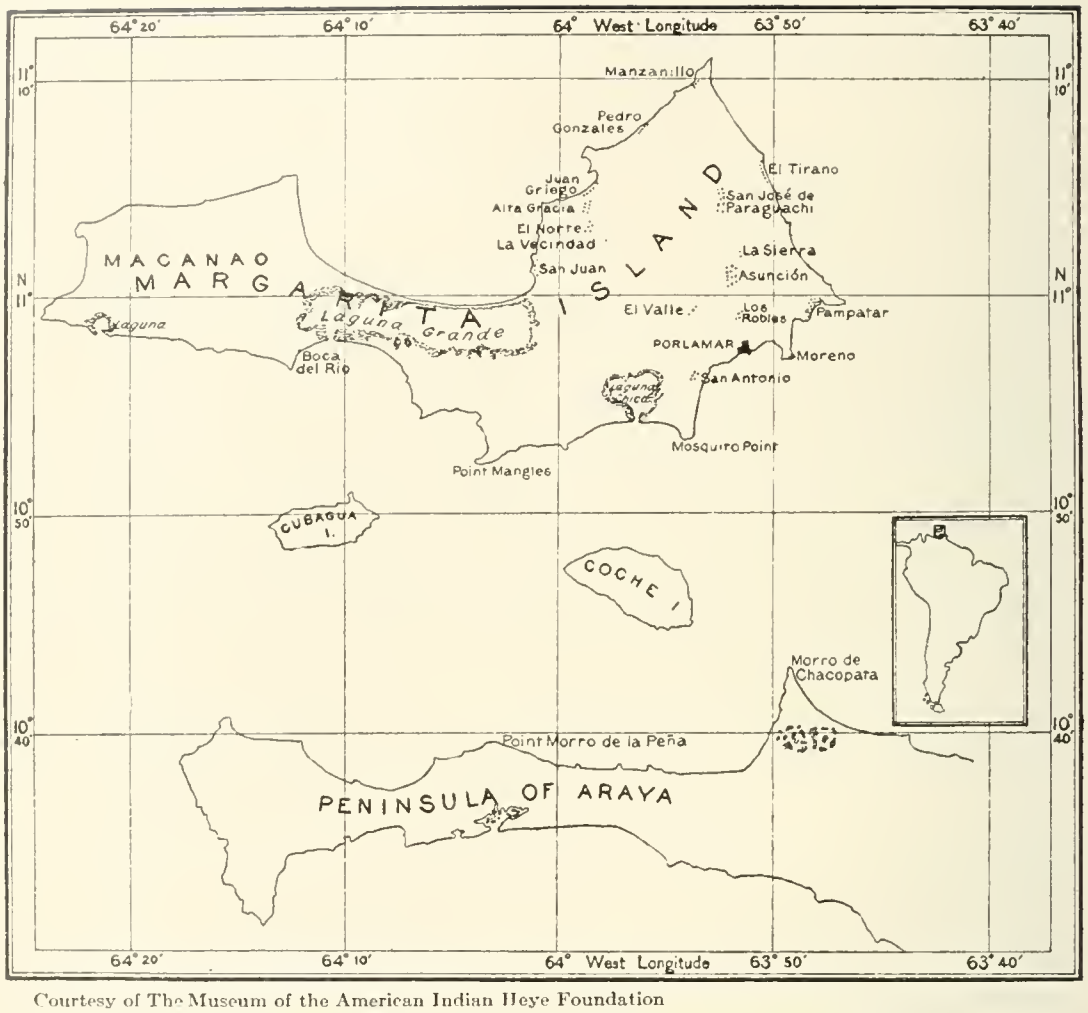
Top: View of La Guaira from a vessel in the harbor. Center: The harbor of La Guaira from the shore. Bottom: Entrance to the palace grounds of the old Spanish governor, Don Guzman de Soto, in La Guaira.

going extensively into the early history of the island since its discovery in 1498. I might mention that the pearl fisheries in the waters surrounding Margarita and Coche were of prime importance during the first 30 years after their existence had been discovered. The fisheries, however, were exhausted by the careless management of the early Spanish settlers, and Margarita Island became lost to public memory and remains lost to this day.

Thanks to the good offices of Dr. Santos A. Dominici, the Venezuelan Minister at Washington, and of Mr. F. J. Yanes of the Pan American Union, I was provided with recommendations to the Government officials of the Republic of Venezuela, which recommendations facilitated my journey and caused me to be treated with the greatest courtesy by the local officials in those places I visited in the Republic. It is with great gratitude therefore that I take this opportunity to express the sincere thanks of the Museum of the American Indian and of myself, for the aid given, to the gentlemen mentioned above and to the cabinet ministers in Caracas.

Leaving New York in January, I first proceeded to La Guayra, the port of entry for Caracas, the capital of Venezuela. La Guayra, a town not more than three streets deep, nestles picturesquely against the slope of the Silla Mountains, and the railroad trip from La Guayra to Caracas over these same mountains is a wonderful experience which the traveler will never forget. After a brief stay in Caracas I took the Dutch West India mail steamer from La Guayra for Cumana, also on the north coast of the Republic, and in Cumana connected with the coastal steamer of the Venezuelan Steamship Co., which took me to Porlamar on Margarita Island. I was enabled in Porlamar to rent a house, which I occupied during my entire stay of four months on the island.

Margarita was occupied by the Guaiqueri Indians at the time of its discovery. This fierce race of people was not readily subjugated by the Spanish colonists. Thanks to the warlike qualities of this race, a large percentage of pure Guaiqueri blood remains on the island to-day, more especially on the north coast in the villages of Juan Griego and Paraguachi. It is in these villages that the locally renowned Margarita hammocks are made from the native cotton, and these hammocks command a ready sale on the north coast of the mainland and are even exported to the British island of Trinidad. One sees the Guaiqueri women making the thread for these hammocks from the native cotton by the ancient spindle-whorl method, and can not but admire the industry of a race that will walk from 15 to 20 miles along mountain paths to the town of Porlamar to sell, for a mere song, a piece of work that took an entire family some three months to complete. Loaded down with a couple of completed



Courtesy of The Museum of the American Indian Heye Foundation

MAP OF MARGARITA ISLAND AND THE ADJACENT MAINLAND.

The island is situated between latitude 10° 52′ and 11° 11′ N., and longitude 63° 47′ and 64° 24′ W. The maximum width is about 37 miles, and the greatest distance from north to south about 19 miles. The nearest points of approach between Margarita and Araya Peninsula of the mainland, namely, Point Mangles and Point Morro de la Peña, are 12½ miles apart. From the latter point on the mainland to the western point of Coche, the island lying in the passage between the mainland and Margarita, is a distance of 8 miles, and from the western point of Coche to Point Mangles on Margarita is a distance of only 6 miles. It is therefore obvious that communication between Margarita and the mainland by means of canoes in pre-Columbian times was an easy matter, especially as the seas here are invariably tranquil.

hammocks on their heads and with another hammock or two carried on the arm in a native-made basket, these women present what is indeed an interesting sight as they walk along the roads, busily fashioning new thread for future hammocks and steadily talking all the while on subjects of local interest.

There are three towns of importance on Margarita Island—Porlamar, Pampatar, and Asuncion. The entire island has a population of about 40,000 souls, and Porlamar has about 5,000. Porlamar is the busiest and most thriving of all three towns and the largest. It is at Porlamar that the bimonthly steamers of the Venezuelan Co. call, although it must be stated that this service is most uncertain. A biweekly service is maintained by sloop with the town of Carupano on the mainland, and intending travelers for Margarita are advised to make Carupano their objective, and to there await the departure of some small sailing craft for Margarita Island. While this method may be more uncomfortable, it is far preferable to a long wait on an uncertain coastal steamer, and one is certain of having to remain in Carupano for not over three days at the most.

Pampatar is the official port of the island, and it is here that all vessels flying a foreign flag have to enter. A monthly service of a small cattle steamer, with limited passenger accomodations, plying between La Guayra and Trinidad and taking in some of the coastal towns en route, connected Pampatar with Trinidad during my stay on Margarita, but, like the coastal service of the Venezuelan national steamers, this service is liable to change in its itineraries and can not be relied upon. There is but little commerce in Pampatar, and the town is fast falling into a decline. The population of Pampatar is about 1,500 souls. Nearby can be found extensive salt deposits belonging to the Government, but which, at the time of my visit to Margarita, were not being exploited.

Asuncion, the third town of importance on the island, is losing the importance which the ruins of large buildings and houses indicate that it possessed in times gone by. It has to-day a population of but 3,000 souls, where in former days the population must have been far larger. The State president of the State of Nueva Esparta, consisting of Margarita, Coche, Cubagua, and the smaller islands in the vicinity, lives here, and so do many of the officials that take part in the government of the island. The government offices are located in the old Franciscan monastery, an interesting relic of the days when the monks of this order brought the teachings of Christianity to the New World. Asuncion is perhaps best known in Venezuelan history as being at one time the residence of the heroine of the war of the Venezuelan independence. It was in Asuncion that a Señorita Luisa Caceres, whose family had betaken themselves to the island of Mar-

garita in order to escape the persecutions of the Spanish Government in Caracas, met Col. Bautista Arismendi, leader of the insurgent forces of Margarita. After a brief courtship, Luisa and the colonel were married, and while still on their honeymoon Doña Luisa was taken prisoner by the Spanish forces and incarcerated in the fortress of Santa Rosa, overlooking the town of Asuncion. Her husband, however, was able to make good his escape. History relates that the commander of the fortress, Urreiztieta, placed the young woman in an underground cell of the fort and sent word to her husband that if he did not cease his attacks upon the Spanish troops his wife would be decapitated. Arismendi thereupon sent word to the Spanish governor, "Diga Usted al je fe español que sin patria no quïero esposa" ("tell the Spanish chief that without a country I do not care for a wife"). Doña Luisa was frequently taken on the battlements of the Santa Rosa fort at those times when the besieging forces subjected the fort to a bombardment. She was later taken to La Guaira, Caracas, and finally to Cadiz, in Spain. Reports state that during the entire period of her captivity this heroic woman absolutely refused to utter one single word of complaint or to let her captors know by word or sign of the agony of mind that she suffered. Of course, this is just a simple and a brief account of the heroism of this prominent figure in the war of the Venezuelan independence, and there are many interesting details connected with the history of Doña Luisa Caceres de Arismendi that I have not the opportunity to relate here.

DOÑA LUISA CACERES DE ARISMENDI.

The heroine of the Venezuelan War of Independence.

The climate of Margarita Island has been renowned for centuries, and the island in times gone by and even nowadays is a favorite health resort for sufferers from all kinds of fevers. This fact is mentioned in a number of the early histories of the island. Neither the anopheles nor the stegomia mosquito are found on Margarita, which would explain that yellow fever patients and those suffering from malarial fevers can come to the island without endangering the health of the residents. The island is especially preferred as a recuperating resort by the inhabitants of Ciudad Bolivar on the Ori-

noco River. There are, however, but poor accommodations in the Margarita towns for transients, and the uncertain steamer connections prevent the island from becoming the national sanitarium for the sick of the Venezuelan Republic.

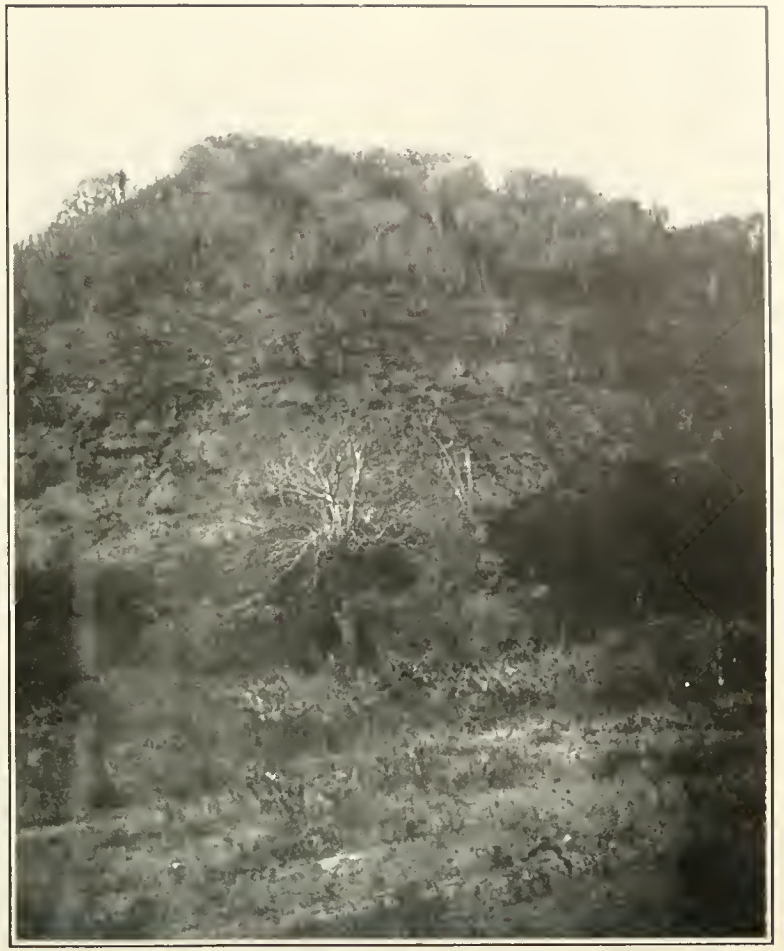
Margarita Island has an area of 444 square miles, and in reality consists of two separate mountain ranges connected by a low sandy isthmus, about 10 miles long and from 70 to 180 yards wide. When seen from a short distance to the northward or southward it will appear as two islands. The eastern portion of the island is 18 miles long and about 14 miles wide. The western portion, known as Macanao, which is practically uninhabited, is about 12 miles long,

A UNIQUE FENCE.

The fence around this adobe house on Margarita Island is formed of growing cacti.

east and west, and 7 miles wide. The lagoon dividing the two parts of the island, known as the "Laguna Grande," or the "Laguna Arestigna," is some 10 miles wide and 2 miles broad. In some parts the isthmus connecting the two parts of the island has an elevation of but 4 to 5 yards above sea level, and in the narrowest part is but 70 yards wide.

The mountains of Margarita consist of two masses, that of Margarita proper and that of Macanao. Although the United States Hydrographic Bureau publication, "Gulf of Mexico and Caribbean Sea," gives the height of the Margarita peak in the Cerros de La Vega as being 3,240 feet, and the highest peak of Macanao as 2,304 feet, I am firmly convinced that the latter statement is in error and should be 3,806 feet. While I was unable to make personal and exact measurements, there can be no doubt, from mere observation



SCENES ON MARGARITA ISLAND.

Left: Cacti growth on the south coast of the island. Right: A bleak hillside in the interior of Margarita.

even, that the Macanao peak is higher than the one on the larger part of the island. The explanation of the error in the Hydrographic Bureau's statement probably lies in the fact that the United States chart No. 2,035, showing Margarita Island, was copied from the British Admiralty chart, and that on both these charts the heights of the Macanao peaks are printed in the dark-shaded part of the mountains. Two heights are given of peaks in the Macanao part of Margarita, and but one of these can be distinctly read on the chart. This is the height of 2,304 feet, given in the Hydrographic Bureau publication. The other peak, however, has a height of 3,806 feet, as a careful examination of the chart with a magnifying glass will show, and this figure evidently was overlooked, on account of its indistinctness, by the compiler of the work referred to above.

The explanation of the lack of prosperity of Margarita Island lies in the fact that the rainfall on the island is so extremely scant as to be almost negligible in some districts. As a result cacti is the prevalent growth on the island, and large tracts resemble the desert lands of Arizona and New Mexico. This lack of rainfall probably is due to the indiscriminate cutting of timber that took place in centuries gone by, when the mountains and the hills were denuded of their forests. No matter what the reasons for the lack of rainfall may be, however, the fact remains that the greater part of Margarita Island can not be used for cultivation and that cacti form the prevalent growth. In the Cerros de La Vega can be found, here and there, small portions of land in close proximity to springs and rivulets, where produce is raised, and the wonderful climate of the island seems to make up here in productivity for the lack of tillable soil in other districts. The only thing that is raised in the arid, nonproductive areas are goats, of which the hides and the cheese that is made from the goats' milk is exported to the mainland. The houses in these regions are made of adobe mud plastered over a framework of intertwined twigs, and the inhabitants use the cacti to form natural fences around their property.

The roads on the island are really nothing more than stretches of sand between the bleak hillocks and the latter present a desolate appearance, covered as they are with dwarfed and stunted trees and parched broom grass, and were it not for the green parts of the interior, where one finds shade trees and picturesque spots to rest the eye, Margarita Island would possess but few attractions as a tropical abode. The scenery in the neighborhood of the Cerro de la Vega makes up in full, however, for the arid coasts of the island and makes the traveler forget the desert-like appearance of the other districts.

Besides hammocks, goatskins, and goat cheese, the island exports a large number of roof tiles to the mainland, the making of which is an important industry in Margarita. It seems that a better quality of

Courtesy of The Museum of the American Indian Heye Foundation.

ON MARGARITA ISLAND.

Upper: Native guides in an artificial reservoir, one of the shallow depressions said to be due to excavations by the pre-Columbian aborigines for the purpose of catching and preserving rainwater. Lower: A shell deposit at Mosquito Point.

a

b

Courtesy of The Museum of the American Indian Heye Foundation.

TWO VESSELS OF PRECOLUMBIAN ORIGIN FOUND ON MARGARITA ISLAND.

Courtesy of The Museum of the American Indian Heye Foundation.

SPECIMENS OF PRECOLUMBIAN POTTERY FOUND ON MARGARITA ISLAND.

Upper: Heads of pottery found by Mr. De Booy in excavating the Giri-gire kitchen middens. Some of these were intended to represent human heads, others those of animals. Lower: Types of handles to vessels and jars found in the same region.

clay is found here than on the mainland, and in consequence tiles made from this clay are in great demand and are sold extensively in Carupano, Cumana, and other towns on the north coast of the Republic. Small brickyards are found throughout the island in close proximity to the banks from which the clay is dug. Large deposits or stacks of tiles can always be seen lying on the beach at Porlamar, ready to be exported to the mainland. Pottery vessels made from the same clay are also made in large quantities, and while the greater part of these are for local use, a not inconsiderable number is shipped to the north coast of the Republic. The adobe bricks from which the better class of houses in the larger towns of the island are built are also made in the local brickyards.

Yet another important item that is exported from the island is manganesite, which is mined on the northeast coast. The exploitation of these mines provides a large number of the inhabitants with work and is being carried on by an American syndicate. The local manager, Mr. C. F. Freeman, was of great help in our work and knows the island thoroughly. Thanks to his kind efforts on our behalf, a great deal of the success of our archeological work on Margarita is due.

The waters surrounding the island abound with fish and dried and salted fish, in consequence, form another important article of export. Of late years a tannery in Porlamar has been doing a flourishing business, and the untanned hides are imported from all parts of the Republic, treated here, and then exported as leather. The locally found divi-divi beans and the mangrove bark of the lagoons of the island provide the necessary tannic acid.

Some cattle and sheep are raised on the island and are occasionally slaughtered for local consumption. The animal diet, however, is mainly restricted to fish, both salted and fresh, and to poultry, which is sold at a remarkably low price. All foodstuffs that are raised on the island are sold at very low prices; on the other hand, all imported foodstuffs and other articles are not only poor in quality but are almost prohibitive in price.

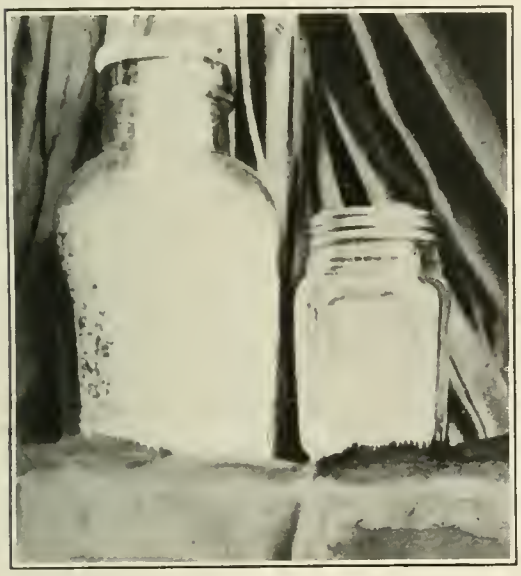
The most important industry of the island is the pearl fishing. Although lately the pearling grounds have again begun to show signs of exhaustion due to excessive fishing by destructive methods, a large number of men are still employed in this work and the Margarita pearls rank in quality with the highest grades of pearls from the Orient. The usual method pursued to gather the pearl mollusks is with rakes that are dragged over the ocean bottom; the shells are then opened by hand and the pearls removed. A number of diving suits are also used in these waters for the collecting of shells from the bottom of the sea, but as the owners of the boats using rakes have to pay a far smaller license fee to the Government than those using the

PRIMITIVE SPINNING.

A Guaiqueria Indian woman of Margarita Island spinning thread for making hammocks.

PORLAMAR, MARGARITA ISLAND.

Making tiles is one of the chief industries of the island, and these are shipped from Porlamar. In the picture may be seen some of the tiles stacked and awaiting shipment.



MARGARITA ISLAND.

Top: The pearling fleet off Margarita Island. Center: Left, bottles full of Margarita Island pearls; right, a handful of pearls. Bottom: The port of Pampatar, Margarita Island, the starting point for the pearl-fishing fleets.

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scaphander method, and as divers familiar with the use of the diving suits command high prices, owing to the risks that they take with the usually defective outfits and the ignorance of the men who work the pumps that provide the diver with air, the raking outfit is the one in general use. The pearls are generally bought by the Turkish and Syrian dealers residing on the island and are shipped by them to Paris, the clearing house for pearls from all parts of the world. It is strange to note that a large number of the pearling boats used in these parts are rigged with lateen sails—a rig which is not seen in the other West India islands and which was probably introduced in Margarita by the Syrian pearl dealers, who were acquainted with its advantages from their residence on the shores of the Mediterranean. There are no reliable statistics available as to the value of the pearl exports from Margarita. L. V. Dalton, in his book "Venezuela," values the export from 1909–10 at £21,000 ($101,000), but from what information I was able to gather it would seem to me that $300,000 would be more nearly the correct figure. There is a closed season for pearling from the 15th of May to the 1st of September, during which time the fishing is absolutely prohibited. This is done to allow the pearl mollusks to spawn, and does a great deal toward preserving the fisheries. Nevertheless, due to the enormous amount of fishing that has been going on in the last 20 years on grounds that have but a limited area, it is said that the pearling grounds are becoming more and more depleted, and that in years to come the industry will once again, as it did after the early Spanish occupation, automatically come to a standstill.

Unlike the inhabitants of the greater part of the other West India islands, the Margaritan is a hard-working individual. He has to be, living as he does upon an island with such a limited amount of arable land and pursuing such an arduous occupation as pearl fishing. Furthermore, I found the inhabitants a remarkably honest and friendly lot of people, ever ready to help the stranger with word and deed in his quest, and I consider the four months I spent on the island as some of the most enjoyable I have spent anywhere, and often look back with the greatest affection upon my residence there.

PROMINENT IN PAN AMERICAN AFFAIRS

Dr. Epifanio Portela, Argentine envoy and minister plenipotentiary to the Quirinal since March, 1911, died in Rome on April 11, 1916. Dr. Portela's death will be deplored by his many friends in the capital of the United States as well as elsewhere throughout the Americas. He was the immediate predecessor of Ambassador Naon as the diplomatic representative in Washington of the Argentine Republic. He presented his credentials as envoy extraordinary and minister plenipotentiary of Argentina to the Government of the United States in May, 1905, and served in that capacity until his transfer to the Quirinal in 1911. At the time he presented his letters of credence to President Roosevelt he happily observed: "I am returning to the United States, Most Excellent Sir, for the second time, having had the honor and good fortune of discharging my first diplomatic duties here." He had been an attaché of the Argentine legation in Washington during President Grant's administration, 30 years before his return as minister. Dr. Portela had been a prominent figure in the intellectual and political life of Argentina for many years. He represented his country at the third and fourth Pan American Conferences, ably filling the difficult position of Secretary General of the latter conference, which met in Buenos Aires in 1910. He was born in Buenos Aires May 29, 1855, and was the son of Dr. Trenes Portela and Amelia Alvarez Portela. Interested in political affairs at an early age, he became a member of the Federal Congress in 1884 and served until 1890. In the latter year he became secretary of interior of the Province of Buenos Aires. As a writer and editor he wielded a powerful influence in his country, having been the editor of La Nacion and also of El Nacional. He had also been a director of the Banco Nacional and of the newspaper La Tribuna. In his death his country sustains the loss of one of its ablest and most beloved sons, as well as an eminent diplomatist and statesman.

Hon. George R. Colton, ex-governor of Porto Rico, died at the Walter Reed Hospital in Washington, D. C., April 6, 1916. Mr. Colton, who had recently been connected with the foreign trade department of the National City Bank of New York, was born in Galesburg, Ill., April 10, 1866. From 1881 to 1886 he engaged in ranching in New Mexico, whence he removed to Nebraska. He served as a member of the Nebraska House of Representatives during the 1889–90 term. In 1897 he became a national bank examiner,

and during the Spanish-American War was instrumental in organizing and became lieutenant colonel of the First Regiment of Nebraska Volunteer Infantry, going in that capacity to the Philippine Islands. There he organized the customs service at Manila upon the American occupation, and served with it until 1905, when he was sent to the Dominican Republic to organize the customs receivership under the modus vivendi between the United States and that country. From 1907 to 1909 he was insular collector of customs for the Philippine Islands, and drafted and presented to the United States Congress the new tariff for the Philippines enacted during its special session in 1909. He became governor of Porto Rico November 7, 1909, and served until November 15, 1913. He was regarded as an authority on matters relating to customs duties and tariffs, and in this connection rendered valuable services to his country and to the large banking interests with which he later became connected.

Sr. Manuel G. Montero y Tirado has recently been appointed financial agent of the Peruvian Government in the United States. His special mission will be the negotiation of a $15,000,000 loan for his Government, the proceeds of which are to be used for the consolidation of certain obligations of the Republic and to raise the gold guaranty of the Peruvian bank note issue. Sr. Montero y Tirado is one of the most prominent financiers of the Republic. He was born in Lima in 1866, educated in England, and has traveled extensively in Europe and the United States. He is a member of the Junta de Vigilancia, the Government board intrusted with the administration of the Peruvian bank note issue which took the place of gold as the medium of exchange in Peru following the outbreak of the European war. He is also president of the Beneficencia Publica, the organized institution which administers all state charities and eleemosynary institutions such as hospitals, asylums, etc. In addition to his other business activities he is manager of the Government Salt Monopoly, of the Compania Administradora de las Almacenes Fiscales, director in the Compania Administradora del Guana, vice president of the stock exchange; and member of the Lima Chamber of Commerce. He was president of the commissions named to prepare the Peruvian representation at the expositions of Quito and of Turin. He has also been president of the Lima Geographical Society. During the visit of the Boston Chamber of Commerce party Sr. Montero y Tirado had charge of all arrangements for their reception and entertainment, and his tireless energy in behalf of these guests of the country will be pleasantly recalled by the visitors. As a representative of the highest type of public spirited, patriotic, and capable business men of Peru no better man could have been selected to represent that Government in the capacity outlined above.

EPIFANO PORTELA.

GEORGE R. COLTON.

SEÑOR DON MANUEL G. MONTERO Y TIRADO.

FRANK A. VANDERLIP.

Mr. Frank A. Vanderlip, banker and financier, has become one of the commanding figures in Pan American affairs. Since his occupancy of the presidency of the National City Bank of New York the policy of establishing branches of that powerful financial institution in various commercial centers of Latin America has been inaugurated. At present the National City Bank has in full operation branch banks in Buenos Aires, Argentina; Rio de Janeiro, Brazil; Montevideo, Uruguay; Santos, Brazil; Sao Paulo, Brazil; and Habana, Cuba. Other branches are to be established in Chile, Peru, and perhaps other countries of South and Central America. The service of these branch banks in promoting Pan American commerce has become perhaps the greatest factor in drawing the 21 nations of the Western Hemisphere into closer and more substantial bonds of peace and friendship. Mr. Vanderlip's services to his own country, the United States, in exerting the great influence of the National City Bank in the extension and development of the foreign trade of the country can hardly be estimated. In his judgment the future welfare and prosperity of the United States depends largely upon the growth and successful development of its foreign commerce, and it is toward its sure and rapid promotion that he is now lending his great talents and energy. One instance of this may be cited in the organization of the American International Corporation, with a subscribed capital of $50,000,000, of whose board of directors he is chairman, and whose foundation is largely due to his active support and initiative. The vast resources of this corporation are to be employed in the promotion and extension of the country's interests in world commerce and industry, and doubtless the Latin American field will be the first one cared for.

Mr. Vanderlip is still comparatively a young man, having been born at Aurora, Ill., in 1864. He was educated at the University of Illinois and the University of Chicago, holding the degree of master of arts from the former institution and that of doctor of laws from Colgate University. In 1889 he served as a reporter, and later became financial editor of the Chicago Tribune, and associate editor of the Economist (Chicago). In 1897 he became private secretary to the Secretary of the Treasury of the United States, Lyman J. Gage, but was soon made assistant secretary of the United States Treasury, a position he held until 1901. He was then offered the vice presidency of the National City Bank of New York, in which capacity he served until he was made president in 1909, the office he still holds. He is a director of many of the largest railway companies and numerous financial institutions in the United States, and is regarded as one of the greatest bankers and most progressive financiers of the country.

PAN AMERICA IN THE MAGAZINES

Old and New São Paulo: The Rise of a Business City, is the title of the leading article in the March number of The Pan American Magazine (New York). Written by the editor, Miss L. Elwyn Elliott, in her usually bright and entertaining style, it covers the early historical period of the city as well as its recent remarkable development. The first part of the story deals with the foundation of the settlement in 1554 by the Jesuit priests under the leadership of Father Jose de Anchieta, the "Apostle of South America," whose noble work among the native Indians is appreciatively outlined. Coming to the period when the little settlement had assumed the importance of a town, the author traces its growth in population as follows:

In the year 1590 Sao Paulo town was able to count 200 free people of European or part European origin, with a quantity of slaves captured from Indian tribes; with a fine open position, plenty of good water and soil, and sufficiently protected, this inland colony was assured of success. A hundred years later the town possessed 700 free people, and in 1766 the captain general counted heads and found 1,516 inhabitants dwelling in 392 homes: within an area of 12 leagues he found nearly 4,000 people, for in those days colonists seem to have preferred plantation life and to have been indifferent to civic attractions. There were more women than men among these free people, and the same condition prevailed in 1776 when the governor listed 534 hearths, with 2,026 inhabitants, of whom 1,205 were women. * * *

Only 5,000 people lived in Sao Paulo city in the year 1816; in 1832 the white population amounted to about 15,000 in the whole municipality, and in 1850 there was scarcely any change in the figures. But after 1875, which is to say after railways began to penetrate the fertile interior and the great development of coffee culture opened the way to white immigration, there was a series of leaps in the number of inhabitants: In 1872 Sao Paulo had 23,000 inhabitants; in 1890, 65,000; in 1893, 131,000; in 1900, 240,000; in 1910, 375,000; and in 1915, 500,000.

* * * * * * *

Between 1890 and 1900 Sao Paulo arose from her condition of a pleasant but practically stagnant town, waking to extraordinary activity; she transformed her outward appearance, practically rebuilding the old city, laying out new areas of streets and repaving the old ones; presently she reformed her water supplies, constructed a splendid system of sanitation, and to-day stands in beauty of edifices (public and private), avenues and city streets, civic cleanliness and order, among the first cities of the Americas. She comes third in size among South American cities, with Buenos Aires first and Rio de Janeiro second.

In regard to the revenues of the city and the civic expenditures Miss Elliott writes:

For the year 1916 the revenues of Sao Paulo are calculated at about 9,000 contos which at the rate of exchange prevailing at the end of 1915 is the equivalent in United States money of about $2,250,000. * * *

City expenditures are high, because Sao Paulo has employed large sums in creating a beautiful and well-kept city, clean, healthy, with fine public service. To perform

Courtesy of The Pan American Magazine.

STREET VIEWS OF SÃO PAULO, BRAZIL.

Upper: The Avenida Tiradentes. Lower: Rua Florencio de Abreu.

Courtesy of The Pan American Magazine.

VIEWS OF SÃO PAULO, BRAZIL.

Upper: One of the city's beautiful streets, the Avenida Hygienopolis. Lower: The Portuguese Hospital.

all this work—and most of it has been done within the last dozen years—she has incurred a city debt of nearly $4,000,000 United States currency, an amount far from excessive in view of her wealth and future prospects as a growing center of development. Under the control of broad-minded prefeitos (mayors) of the city a great amount of boldly conceived improvement work has been done; the name of Paul Souza is among these makers of Sao Paulo, his work being followed by that of the famous Paulista, Conselheiro Antonio Prado, to whom both State and city owe much. The present prefeito, Dr. Washington Luiz, is a fine, representative son of Sao Paulo, energetic, farseeing, capable; he has done more than any other head of the city to purify it morally and physically, and while laying stress upon strict economy he has not hesitated to go ahead with certain civic improvements which will add much to the grace of the city. Among these improvements we may note the completion of the asphalting of the beautiful Avenida Paulista, and the beautifying of the Vale of Anhangabahu with terraced gardens. * * *

The greatest source of revenue of Sao Paulo city is that obtained by the taxes levied upon "industries and professions." The greatest yield in this long list is that from factories, and the growth of income is significant of the quick development of Sao Paulo as a business center. In the year 1907 the taxes upon industries and professions yielded less than 2,000 contos of reis, while in 1911 they brought in 2,609 contos, or nearly half of the total city income. In 1913 the amount yielded had risen to over 3,000 contos of reis; in 1915 to 3,447 contos, out of a total revenue of about 8,661 contos. It may be calculated that this tax always brings in over 40 per cent of the city income.

Examining this list of contributing industries, professions, and commerce, one finds that banks and banking agencies pay together some $37,000 a year; shoe factories contribute $8,000, and shoe stores rather less; ironworks pay nearly $7,000; furniture factories and sellers bring in another $8,000; goldsmiths and jewel workers about the same amount; match factories pay over $4,000; druggists about $9,000; sawmills, $6,000; cotton factories, nearly $12,000; jute factories, $8,000; and potteries another $8,000.

Among the factories paying smaller sums are makers of woolen cloth, soaps, wax candles, hats for men and for women, chocolate, cigars and cigarettes, shirts, paper bags, paper, clay pipes, pins, beers, alcoholic liquors, mineral waters, salt and rice and flour mills, rope and cord, sweets, biscuits, tanneries, mirrors, bottles, window glass, macaroni, cotton thread, suit cases and trunks, stockings, screws and nails, combs, perfumes, pianos, chemicals, gunpowder, silk and silk ribbons, writing ink, vinegar. In reviewing this list it is plain that Sao Paulo makes very many of the luxuries as well as the necessities of life for her citizens. * * *

The biggest items in the expenditures of the city of Sao Paulo are those for public service, including upkeep of parks and gardens and municipal cleaning; all this work is splendidly performed, the city being quite one of the best kept on the Western Hemisphere. Nearly $1,000,000 a year is thus spent.

Large sums have been spent within the last 10 years on the acquisition of properties in order to re-form certain parts of the city; a loan was made in 1912 equivalent to about $2,500,000 and chiefly applied to this purpose. The State and the city work together for the betterment of the capital, the former bearing certain heavy sanitation expenses, cost of waterworks installations, and other health measures. As a result of this conjunction of efforts Sao Paulo is to-day a very healthy city, not only on account of its naturally fine location on an upland plain swept by life-giving winds but also because it has a fine sanitary system and is spotlessly kept—an example to very many other American towns.

In regard to the cosmopolitan character of the city's population, its manufacturing advantages, cheap water power, and its commercial future, the author writes:

Sao Paulo, in common with all South American cities of importance, has a large foreign business element; the English and French have a strong hold in finance, have

Courtesy of The Pan American Magazine

EDUCATIONAL INSTITUTIONS OF SÃO PAULO.

Top: The Museum of Ypiranga. Center: The Academy of Law. Bottom: The Commercial College, "Alvares Penteado."

Courtesy of The Pan American Magazine

VIEWS OF SÃO PAULO, BRAZIL

Top: The Instituto Serumthérapico at Butantan, a suburb of São Paulo. Center: View of the factory district of the city. Bottom: The reservoir at Araca, whence comes the drinking water of the city.

done a great deal of construction work, and own some powerful commercial houses representing large investments. The Italians are generally represented by the industrial element and smaller commercial enterprises, although there are also some great Italian fortunes here; Germans long ago entered in commerce, banking, and agriculture, and there has been, especially since the European war began, an increasing commercial interest on the part of North Americans in Sao Paulo.

However, it must not be imagined that as has happened in some parts of Latin America, enterprise is in the hands of foreigners alone; the Paulista has himself worked to make his State great, has constructed splendid railways, built roads, and bridged rivers, developed huge plantations, created great commercial houses, is operating fine banks, and altogether is as keen an international trader as his brother from Europe. The Paulista and the European and North American enjoy equal privileges in a country that is exceedingly hospitable and has large rewards to offer to genuine enterprise. The man who comes from afar has every reason for the content with which he usually settles down to make his home in Sao Paulo.

"During my residence here," said one of the foreigners to the writer at the beginning of 1916, "I have twice seen the population of Sao Paulo double itself. I should not be surprised to see the same thing happen again in the course of the next 10 years, with the pastoral development of the huge interior regions to which this city is the door. The modern Sao Paulo has been built within the last quarter of a century, and although the impetus given by the rise of the coffee industry was the great moving power, yet it has been greatly supplemented by the expansion of manufacturing in or near the city."

"Do you expect to see this factory extension continue?"

"Certainly. Remember that this is the greatest manufacturing center of all Brazil, and that we can ship our goods into every State in the Brazilian Union and cater to a total population of over 22,000,000 people, even if we do not take into account the markets of other South American countries."

Speaking on the same subject to a Brazilian of broad views, this gentleman made the point that great potential wealth for Sao Paulo lay in her possession of enormous water power. "Almost all the tributaries of the Parana are rivers following a turbulent course, and on their way from the mountains of the coastal barrier to the sloping interior, drained by the Parana, there are many powerful falls. Only a half dozen of these are utilized, but the time will come when power will be drawn in great volume to the city of Sao Paulo, furnishing cheaper motive force for our mills and factories. The amount now employed is the merest fraction of what will sooner or later be developed." I have heard it stated that 1,000,000 horsepower could be developed within 59 miles of Sao Paulo city.

The following quotation is credited by the author to "a man closely in touch with international business development:"

"It is a healthy city, a place where the white man can live and rear a big, healthy family. That is one great point. Then take its extraordinary situation with regard to the flow of commerce: Sao Paulo is the natural outlet not only for all the products of the rich interior of Sao Paulo State, the coffee, cattle, cereals, and forest produce, but it is the door for the huge expanse of Matto Grosso, Goyaz, and a great part of Minas Geraes, even if we do not count upon our railway connection with the three most southern States.

"I see Sao Paulo as the center of a great network of spreading lines all of which bring agricultural and mineral products to this great point of distribution. Within a radius of 200 miles of Sao Paulo there are 8,000,000 people, and this is more than can be said of any other city of South America.

"We have a great deal to be proud of in Sao Paulo. I am not speaking only for our achievements in making the city convenient and beautiful, for any visitor can see for himself our fine colleges, hospitals, Government buildings, splendid residences,

Courtesy of The Americas.

AGRICULTURE OF ARGENTINA.

Upper: A typical residence of the wealthy Argentine farmer. Lower: Stables and outhouses on an Argentine estancia.

Courtesy of The Americas.

LODGE OF THE MANAGER OF AN ARGENTINE ESTANCIA.

Argentina is the land of what may be called the millionaire farmer. The owner of an estancia often spends most of his time in the capitals of Europe, his vast estate being left in the hands of a manager, who is frequently an Englishman or a German.

evergreen parks; he can ride on our 240 kilometers of street railway, visit the Municipal Theater and the museum at Ypiranga, go out to beautiful suburban districts and visit over 300 factories, and he will still miss the spirit that has made Sao Paulo great if he does not realize in what a short space of time all this has been accomplished, and in what a daring attitude of trust for the future. The Paulista has planned for his children boldly and lavishly."

The Agriculture of Argentina, in the March number of The Americas (New York), deals with that very important element in the Republic's material wealth and progress in an interesting and comprehensive manner. Without going into tedious details, the article gives a general survey of the agricultural industry, tells of the products that have been specialized, outlines present efforts to diversify production, etc. The most striking features are embodied in the following excerpts:

Argentina is a great nation specializing in extensive agriculture and allied or dependent industries. In order to get the right picture of Argentina's agriculture, it is good to compare it with Denmark, a nation also specializing in agriculture and industry based upon it, but with an intensive development unknown anywhere else in the world. Denmark has to economize its territory; it raises more product to the acre than any other nation, and then it uses the raw product in further manufacture within its own borders, grinding wheat into flour and on into baked stuffs; turning other grains into cheese, butter, eggs, and meat; distilling other products; putting everywhere its output into the most valuable form before it sells it. Argentina, exactly the opposite, has vast reaches of land; it produces small amounts to the acre; it exports nearly all its products in raw or only slightly advanced state; it is a land of magnificent distances and bonanza farming, with no attempt at intensification, because the time is only now beginning for that.

Wheat, corn, oats, and linseed have been the sole thought of the farmer. These are the "cash" crops, the ones for which transportation and the markets were ready organized. The Argentine farmer carries out the national idea and also specializes. Everything, thus far, has favored extensive one-crop agriculture. The land had been held in vast estates. A high proportion of all the agriculture is conducted on the "share" basis, with no certain tenure of land. The thing for the man who was in the cereal-raising business was to get as much wheat or corn as possible out of a minimum of cultivation cost. Farming with machinery, on a large scale, is the Argentine idea. And the typical farm is not a self-contained industry, as it is even in extensive farming in the United States. The farmer buys much even of his food. In a country 96 per cent of whose product is purely agricultural or grazing, poultry raising has not been carried on sufficiently to provide eggs for the cities, and millions of them are brought from the Northern Hemisphere, at prices that would stagger a New York housekeeper. Potatoes and canned vegetables are important Argentine imports. All that comes simply from extensive specialization in the raising of certain products. And thus Argentina is becoming one of the foremost, and may shortly be the foremost, supplier of cereals for the world's markets.

Argentina has a magnificent soil. There is probably nowhere else in the world so enormous an even, rolling territory covered with deep, rich humus, with few rock outcroppings and none of the troublesome mixture of bowlders that occurs in our own best agricultural regions. Steam plowing is common. Cultivation and seeding does not have the labor devoted to it that even our most extensive farmers give. As yet there is comparatively little irrigation. Harvest time is the season of greatest effort. The most modern machinery is used in this phase of the work. * * *

Argentina is steadily improving her rural industries. The territory available for them can be expanded enormously as population settles untaken areas and as certain

Courtesy of The Americas.

INTERIOR OF AN ARGENTINE STABLE.

The Argentine estanciero takes great pride in his horses and cattle, and as a consequence they are housed in well-built stables equipped with all modern devices for preserving their cleanliness and sanitation.

Courtesy of The Americas.

SOME ARGENTINE THOROUGHBREDS.

Argentine stockmen have improved the breed of their horses as well as of their cattle. There are about 75,000 finely bred race horses and mares in the country, while there are perhaps 1,000,000 heavy draft horses and mares composed of Percherons, Clydesdales, Normans, etc. Fabulous prices have been paid for celebrated English racing stallions, and some of the finest thoroughbreds in the Western World are to be found in the Republic of Argentina.

Courtesy of The Americas.

ARGENTINE CATTLE.

During the last 30 years wonderful progress has been made in improving the breed of Argentine cattle. Among the pure-bred types the Durhams lead, with Herefords, Polled Angus, Dutch, Jerseys, and Flemish following in the order named. In four years over 3,000 high-class bulls were imported by Argentine stock raisers, in some instances prices as high as $8,000 being paid for a single animal.

great national projects for irrigation are carried out. Patagonia is a coming source of the world's beef, mutton, and wool. Much of this coming development of cereal production and grazing must come in the form of large enterprises. Particularly grazing, in a small way will be almost impossible in the Patagonian region.

But in the older parts of Argentina agriculture is changing. The statistics of the agricultural industry show a very interesting tendency toward smaller holdings of land as between 1902 and 1912. The estates of 12,000 to 25,000 acres in the old provinces have decreased in number some 30 per cent. Small holdings have barely doubled.

The cultivation of corn is rapidly increasing. And while the total crop is only about an eighth of that of the United States in recent years, Argentina exports three times as much as we do.

There is an effective movement on in Argentina along what we call lines of "rural organization." There were 34 cooperative agricultural societies in the country in 1914 formed for various purposes, including insurance, rural loans, cooperative purchase and use of machinery, purchase and sale and the improvement of live stock. For 40 years the grazing interests of the country have been improving their herds and flocks. Last year the pedigreed cattle, sheep, horses, donkeys, and pigs in Argentine registers were valued at just short of $15,000,000. The auction sales of the Argentine Rural Society at Palermo, including cattle, horses, pigs, sheep, goats, and poultry exhibited, have aggregated a value of from a million to a million and a half dollars of late years. World's records for high prices of blooded animals are frequently made at this great show, a national event.

A new thing in Argentina of interest to us is the cultivation of the pig. Early in 1914 the Argentine Rural Society called a special meeting to boom the production of pork stock. North American packing interests are helping along this movement. The society is also cultivating the poultry idea among the farmers. In fact, a definite campaign for the modification of the close specialization of the Argentine farmer is on, and steadily the peculiarly Argentine economies of rural production are going to be developed. Argentina will not for long buy foods, excepting specialties like coffee, yerba mate, etc., that can not possibly be grown there. The public-markets idea has taken in Buenos Aires, and an official organization of the reception and public sale of vegetables, dairy products, meats of farm making, fruits, etc.

It does not appear likely that Argentina will soon worry over intensive farming. While the value of some land is high, the economies of production seem now to indicate the continuation of large-scale farming with an increasing use of machinery. The oil fields now under development may bring "gasoline farming" extensively.

Argentina is the land of what may be called the millionaire farmer. So much grazing, wool production, and cereal growing is on the large scale, and many large fortunes and incomes are obtained from the premier industry. Country estates are frequently almost princely in domain, appointment, and value. Labor is furnished by a picturesque class of native Argentinians, the temporary harvest supply being supplemented by a large migration, in ordinary times, from the south of Europe, coming in the Argentine spring and returning home in the Argentine fall.

Over 90 per cent of the world's cereals are produced in the Northern Hemisphere. The crops of Argentina, Australia, and other Southern Hemisphere producers come into the market at the season of steady prices. Normally Argentina's wheat begins to be shipped early in February and moves most heavily in April. The Argentine corn flows out in June and continues strong till the end of the year. Of late years Argentine wheat has averaged a few cents below a dollar a bushel in all-round export sales. The price last year was probably higher. Corn has been about 54 cents. Argentine wool has steadily risen in price from $6\frac{1}{5}$ cents a pound in 1886 to around 10 cents in 1900, and from 15 to $17\frac{1}{2}$ cents in recent years. The export of new clip comes normally in November, but lack of shipping facilities has held this year's production back.

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED UP TO APRIL 15, 1916.[1]

Title.	Date.	Author.
BRAZIL.		
	1916.	
Annual report for 1915, No. 1	Feb. 21	A. T. Haeberle, consul, Pernambuco.
Increased price of beer in Brazil	Mar. 1	A. L. M. Gottschalk, consul general, Rio de Janeiro.
Permanent exposition of Brazilian products	...do....	Do.
Telephone systems	Mar. 2	Richard P. Momsen, vice consul, Rio de Janeiro.
Exports of chilled beef, 1915	Mar. 3	A. L. M. Gottschalk, consul general, Rio de Janeiro.
COLOMBIA.		
Platinum industry, output in 1915	Mar. 1	Leonard Blake Modica, vice consul, Cartagena.
Telephone between Cartagena and Barranquilla	Mar. 16	Do.
Colombian protest laws	Mar. 23	Do.
COSTA RICA.		
Market for American marble and granite	Mar. 17	Samuel T. Lee, consul, San Jose.
CUBA.		
Conditions of the tobacco crop	Mar. 20	R. M. Bartleman, consul, Cienfuegos.
DOMINICAN REPUBLIC.		
Dyewoods	Mar. 2	Carl M. J. Von Zielinski, vice consul in charge, Santo Domingo.
Dyewoods in northern Santo Domingo	Mar. 14	Frank Anderson Henry, consul, Puerto Plata.
Need of ships to transport logwood	Mar. 16	Carl M. J. Von Zielinski, vice consul in charge, Santo Domingo.
HONDURAS.		
Annual report of district for calendar year ended Dec. 31, 1915.	Mar. 10	Francis J. Dyer, consul, Ceiba.
Market for American marble and granite	Mar. 12	Walter F. Boyle, consul, Puerto Cortes.
New chamber of commerce at San Pedro Sula	Mar. 28	Do.
MEXICO.		
Trade journals and catalogues	Mar. 10	Wm. E. Alger, consul, Mazatlan.
Suggestions for retention and development of trade	Mar. 11	Do.
NICARAGUA.		
New passenger service between Atlantic coast ports of Nicaragua and Costa Rica.	Mar. 14	Cornelius Ferris, jr., consul, Bluefields.
Annual report on commerce and industries, 1915, first section.	Mar. 16	Do.
Trade opportunity, cotton cloths	Mar. 18	John A. Gamon, consul, Corinto.
PANAMA.		
Annual report on commerce and industries, 1915, first section.	Mar. 10	Julius D. Dreher, consul, Colon.
Increased freight rates to Isthmus	Mar. 15	A. G. Snyder, consul general, Panama.
Market for American marble and granite	Mar. 18	Julius D. Dreher, consul, Colon.
PARAGUAY.		
Translation of law of moratorium for 1916–17	Feb. 4	Samuel Hamilton Wiley, consul, Asuncion.
Marketing goods in Paraguay	Feb. 25	Do.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America, but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

ARGENTINE REPUBLIC

According to figures recently published there was a marked decrease in the COMMERCIAL FAILURES in Argentina for February, 1916, the record being the lowest for a period of that length in the last five years. The failures for February, 1916, showed assets of 7,034,503 pesos (paper peso = $0.4246), with liabilities of 6,576,349 pesos.——According to a recent estimate of the Department of Agriculture of the Argentine Government, the area sown in CORN in 1915–16 was 4,017,850 hectares, as compared with 4,203,000 hectares sown in 1914–15, or a decrease of 185,150 hectares, due to drought and unfavorable conditions at time of planting.——"Pandora," a celebrated piece of marble SCULPTURE, will soon be placed on view at the Argentine Embassy in Washington. The figure, representing the chiseled form of a modern woman, gracefully leaning on an hermetically sealed box, is the work of a promising sculptor in Buenos Aires, Señor Pardo de Tavera, and recalls in a delicate and most striking way the mythological fable of Pandora.——The total imports of coal into Argentina during 1915 amounted to 2,543,887 tons, compared with 3,421,626 tons imported in 1914, showing a decrease in 1915 of 877,739 tons. Due to scarcity of shipping facilities, the shortage of coal has increased in 1916, and QUEBRACHO WOOD is being extensively used for fuel as a substitute for coal, but has risen in price from 18 paper pesos to 27 pesos per ton. Exploitation of the important oil fields of the Republic continues with increased activity and more drilling machinery is being installed to meet the growing demand for oil as fuel in place of coal.——Great activity in RAILWAY CONSTRUCTION is shown by the latest report of the Ministry of Public Works. Besides the extension and improvement of various parts of the railway system of Argentina authorized by recent executive decrees work is at present progressing favorably on the following five national lines under construction: Branch from Nare to San Jasief, 72 kilometers long; branch from Pichanal to Oran, 26 kilometers in length; line from Catamarca to Tucuman, 186 kilometers long; branch from Talapampa to Alemania 11 kilometers long; branch from Metan to the East, 242 kilometers long.——The CATTLE CENSUS for the Province of Buenos Aires is almost completed. The Province of Santa Fe is undertaking a similar work, and it is proposed to make the statistics permanent by correcting them each year according to information furnished by the agriculturists and live-stock raisers, who will cooperate with the Argentine Rural Society, the Grange, and other organizations.——The Argentine Government is at present constructing six important IRRIGATION works in the Province of La Rioja, consisting of canals, dams, etc.,

the most important of which are the works at Chilecito, Sañogasta, and Nonogasta. The works for Pinchas and Chuquis have already been completed, and those at Aminga and Aimogasta are nearing completion.——In commemoration of the centennial anniversary of Argentine independence, the Argentine Government has authorized the printing of 90,000,000 POSTAGE STAMPS to be put on sale on July 8, the eve of the anniversary. The denominations of ½, 1, 2, 3, and 4 centavos will bear a bust of Laprida, president of the Tucuman Congress of 1816. The 5 centavos value will show the signing of the declaration of independence. All other denominations will have the bust of the Argentine patriot, Gen. San Martin.——In 1914 and 1915 the SALES OF REAL PROPERTY in the States and Territories of the Argentine Republic effected by one prominent firm of Buenos Aires, according to a report recently issued by them, aggregated in value 41,058,934 pesos national currency, of which sum 18,595,872 pesos represented the sales of the year 1914 and 22,463,062 those of 1915. In 1914 the sale of 221 houses realized 7,246,460 pesos, against the sale of 377 houses, aggregating 13,739,609 pesos in 1915. In 1914, sales of 162 tracts of land realized 9,507,929 pesos, as compared with 121 tracts of land sold in 1915 for 7,014,424 pesos. The proportion between the greater number of houses sold in 1915 and the total value obtained for them seems to indicate in general a fall in city values, while a greater firmness in rural property is shown by the total value received in 1915, almost equal to that of 1914, for a much smaller number of parcels of land. In 1914 the highest prices obtained for city property were 301,000 pesos for a house on Alvear Avenue, and 810.96 pesos per square meter for land on Grudo Street—values that in 1915 were represented by 1,520,000 pesos and 1,331.12 pesos, respectively. In 1914 the highest prices received for country property were 485,000 pesos for a tract of land in Ramallo and 1,000 pesos per hectare for land in Pergamino. In 1915 a field in Loberia sold for 530,936 pesos and 1,183.53 pesos per hectare was obtained for land in Esteban Echeverria.——On March 14, 1916, the amount of MONEY IN CIRCULATION guaranteed by the Government was 1,000,520,326 pesos national currency, the highest figure ever reached. There has been a steady increase since 1901, when only 295,165,927 pesos were in circulation.——The NIGHT COURSES in practical instruction inaugurated on June 1, 1915, by the National College Mariano Moreno of Buenos Aires have given most satisfactory results. Since June 1, 2,800 persons have applied for admittance to the 26 courses offered, and preparations are being made for enlarging the scope of work for the ensuing year.——The Government has opened up large tracts of land in the Territory of Misiones and is offering it to colonists in blocks of 50 hectares for the cultivation of YERBA MATÉ (Paraguayan tea). The soil in this Territory is especially adapted to this commodity, as shown by

the widespread occurrence of the wild variety. As Argentina and Brazil are large consumers of yerba maté and import it extensively from Paraguay, and as it is estimated that a plantation in full bearing yields 700 pesos per hectare every season, a great increase in its cultivation is expected.——Two new public SCHOOL BUILDINGS in Buenos Aires, the President Uriburu and Ramos Mejia, constructed at a cost of 233,422 and 285,730 pesos, respectively, and with electric lighting installed in all departments, have recently been completed and will be opened for use during the present year.——An important JEWISH CONGRESS was inaugurated in Buenos Aires on February 27, to be followed shortly by similar congresses in other countries, to discuss the best means of attaining the high aspirations for the welfare of their race.——According to the report recently submitted to the Minister of Agriculture by the committee in charge of ARGENTINE EXHIBITS at the Panama-Pacific Exposition at San Francisco, the collection of 2,000 agricultural samples of cereal, foraging, and oleaginous plants, and the various manufactures thereof, will be distributed among the Argentine consulates in the United States. A considerable part of the cereals, woods, hides, and other exhibits will form the nucleus of a museum of national products to be established in connection with a library of national authors at the Argentine Embassy in Washington. Already 6,800 volumes have been secured for the library.

BOLIVIA

An executive decree of February 16, 1916, prescribes the procedure required in obtaining papers relating to the denouncement and working of mines. These rules and regulations contain 14 articles and numerous references and explanations referring to the application of the MINING LAWS now in force in the Republic.——The FREE SCHOOL OF SOCIAL SCIENCES opened its courses in La Paz on February 26 last, under the direction of Dr. Manuel Sánchez Bustamante, with an attendance of 30 pupils. At the opening session the director of the school delivered an instructive lecture on the State and its relations to religion and science. Among the corps of professors of this school are the following: Dr. Daniel Sánchez Bustamante, professor of sociology; Sr. Dario Gutiérrez, currency and monetary systems; Dr. José Santos Quinteros, banking laws; Dr. Lewis Tejada, political economy, and Dr. Tomás M. Elío, professor of mercantile law.——The high price of WOLFRAMITE and of other ores mined in the Republic, as well as the favorable rates of exchange which have prevailed for some time, have made mining in Bolivia one of the most flourishing industries of the country.

Much of this substance is found at and in the vicinity of Oruro, and numerous prospectors are now reported to be engaged in looking for wolframite in the principal mining zones of the nation.——The AGRICULTURAL SCHOOL at Challapata, founded with the special object of giving instruction to the native population of that part of the Republic, has been moved to Rosario Plantation, near the town of Challapata. Because of the good work done by the school it was decided to enlarge it, and it is now prepared, in its new quarters, to accommodate a larger number of pupils than heretofore. There is no charge for tuition, and a determined effort is being made by the management of the school to secure a larger number of pupils to take up this work.——The police authorities of the city of La Paz, in compliance with the law which makes Sunday a day of rest, have ordered saloons, hotel bars, and other places where LIQUORS are dispensed, closed on that day.——The President of the Republic has accepted the offer of the Bank of the Bolivian Nation and the National Bank of Bolivia to take the entire issue of CUSTOMS BONDS (Vales de Aduana), amounting to 10,250,168.92 bolivianos (boliviano = $0.3893), issued in accordance with the law of December 16, 1915, at 95 per cent of their nominal value. The proportion of the National Bank of Bolivia is 500,000 bolivianos, and the remainder is for account of the Bank of the Bolivian Nation. The banks will offer these bonds, which bear 9 per cent annual interest, to the public at 98 per cent of their face value from the date of issue until September 30, 1916, plus accrued interest at the time of sale. From October 31 to December 31 of the present year the sales are to be at par plus accrued interest, and from the 1st of January, 1917, the rate for the sale of these customs bonds will be determined according to the demand for same, but in no case shall the premium exceed 10 per cent of their nominal value. The banks agree to make commercial loans, taking these bonds as security, at a rate of interest not exceeding 9 per cent per annum. The printing of the bonds is for account of the Government, and they are exempt from State and municipal taxes.——Roman Kozlowski has been appointed by the National Government director of the SCHOOL OF MINES at Oruro.

BRAZIL

In 1915 the city of Rio de Janeiro consumed 197,271 head of CATTLE, 37,541 hogs, 10,280 calves, and 12,680 sheep.——An Argentine-Brazilian CHAMBER OF COMMERCE, the object of which is to promote industrial, commercial, and agricultural relations between the two Republics, has been established in Buenos Aires

In 1915 the Argentine-Brazilian commerce showed large increases both in exports and imports.——Many plans and preparations are already under way for the celebration of the centenary of Brazilian independence in 1922. The Engineering Club is preparing a MAP of Brazil, showing the mountain and river systems of the country, climatic zones, boundaries, means of communication by land and water, and all other particulars, in accordance with the rules and regulations as prescribed in London in 1909 by the International Commission for Charting the World on a scientific basis. The municipal, State, and Federal authorities will cooperate in this important work, which will be completed for the centennial celebrations.——The FOREIGN COMMERCE of the State of São Paulo through the port of Santos for the year 1915 showed increases of 22,987 contos paper (conto paper = about $250 United States currency) in imports and 112,263 contos in exports, as compared with 1914. Exports of chilled meat increased in value from 1 conto in 1914 to 5,739 contos in 1915. Exports of coffee amounted to 12,119,741 sacks, valued at 453,699 contos, against 8,493,557 sacks, valued at 350,094 contos, exported in 1914. The value of hides exported increased from 460 contos in 1914 to 2,845 contos in 1915.——A PERMANENT EXPOSITION COMMITTEE has been named to make arrangements for the various expositions to be held during the year 1916. The Ministry of Agriculture has provided funds for the erection of permanent buildings, in which will be held the Second Fruit Exposition, July 9–16, jointly with the First Horticultural Exposition. The California Associated Raisin Co. was awarded the gold medal and first prize on its exhibit at the first fruit exposition recently held in Rio de Janeiro.——A Brazilian RICE CONGRESS was inaugurated in São Paulo on March 25. Its object is to study the most effective means of developing and perfecting the culture of rice in the country.——The CUSTOMS REVENUES of Brazil during the month of January, 1916, amounted to 11,719 contos, as compared with 8,220 contos for the same month in 1915, showing an increase of 3,499 contos, or 42.57 per cent.——The exportation of MANGANESE has increased fourfold in the last year, the shipments from Russia and India being curtailed on account of the war. The Morro da Mina Co., at Queluz, has a reserve estimated at 5,000,000 tons of manganese ore averaging 50 per cent in purity, and over 800 tons per day is being shipped over the Central Railway of Brazil.——The *Guajará*, of the Brazilian Lloyd Co., which has been under repairs for two years, recently cleared for New York from Bahia with a cargo of 23,000 sacks of CACAO, upon which the freight charges collected were $1 per sack.——During the month of February, 1916, IMMIGRANTS to the number of 1,350 entered Brazil through the port of Rio de Janeiro.——According to a report of the department of TELEGRAPHS, the receipts of this branch of the public service

during 1915 showed an increase of more than 20 per cent over 1914. For the month of January, 1916, the receipts amounted to 1,109 contos, as compared with 1,090 contos for the same period in 1915.——A report recently submitted to the National Society of Agriculture shows that Brazil exported in 1915, 59,074 tons of SUGAR, worth 14,430 contos paper, of which 37,981 tons, or 64.2 per cent of the total tonnage, was produced in the State of Pernambuco.——The government of the State of Minas Geraes has authorized a new CENSUS to be made of its pastoral and agricultural resources, with the object of promoting cattle raising, farming, and meat freezing.——Great interest is now being directed to sections where COTTON may be grown. In 1915, 30,000 kilos of cotton was produced in the State of Minas Geraes, and it is estimated that the production in that State for 1916 will be increased to 300,000 kilos. An elaborate program has been prepared for the cotton conference to be held in Rio de Janeiro, May 1–10, and representatives from every State in Brazil will be in attendance.——On January 31, 1916, Dr. Oliveira Lima, the eminent Brazilian scholar, completed at Harvard University his course of lectures on SOUTH AMERICAN HISTORY. Students taking the course had a list of more than 80 subjects for theses from which to make selections.

CHILE

The "Sociedad de Fomento Fabril" (Society for Industrial Encouragement) of the National Capital has decided to hold an EXPOSITION OF NATIONAL PRODUCTS at the Quinta Normal in Santiago from the middle of September to the middle of November of the present year. All Chilean manufacturers have been invited to participate. There will also be exhibits of foreign machinery, apparatus, utensils, tools, and manufactured products.——A bill has been introduced into the House of Deputies of the Chilean Congress authorizing the President of the Republic to expend annually, through the department of public instruction of the Chilean Government, for EDUCATIONAL PURPOSES for a period of 10 years, the sum of 4,000,000 pesos.——William H. Foster, a Chicago banker and capitalist, recently visited the Republic with the object of studying the industrial development of the country and the opportunities for the profitable investment of American CAPITAL.——According to press reports offices of the ITALIAN BANK will be opened in Santiago and Valparaiso during the present month.——On March 4 last a large CANNING FACTORY at Calera was opened for business.——On the first of last month the Council of State (Consejo de Estado) approved the new CUSTOMS TARIFF, but decided not to promulgate it until

it had been distributed to all the customs administrators of the Republic.——The steamer *Skandia*, having a capacity of 500 tons, was recently launched from the Valdivia docks. This vessel will engage in the coastwise trade of northern Chile.——In normal years the Republic of Chile exports annually more than 2,500,000 tons of NITRATES, valued in round numbers at $120,000,000 gold. The annual exports of iodine, one of the by-products of nitrate, is 500 tons, valued at $2,000,000. The nitrate works in operation in the Republic number 160. These works employ 40,000 workmen and consume annually 6,000,000 tons of coal.——The AERONAUTICAL CONGRESS, which met in Santiago on March 9 last, with representatives from eight South American countries, elected Santos Dumont honorary president, and Jorge Matte, president.——Sr. Elías Errázuriz has been appointed CONSUL GENERAL of Chile in Cuba.——According to the RAILWAY BUDGET of the Government of Chile, the estimated receipts of the State railways for the present year are 1,450,000 pesos, currency, and 38,888,888 pesos, gold, of the value of 18d. The estimated expenditures during the same period are given as 41,874,766 pesos, currency, and 16,430,685 pesos, gold, of the value of 18d.——The Chilean Trans-Andean and the Buenos Aires and Pacific Railways have extended until May 31, 1916, the SPECIAL TARIFF of 80 shillings per ton on shipments in carloads of 16 tons of the following Chilean articles: Beans, chick peas, lentils, nuts, rice, malted barley, preserved fruits, shell fish, carob and mustard seed, cereals for planting, alpiste (bird seed), coffee in the grain, flour, oats, vegetable, and canned goods. A special rate of 70 shillings per ton is made on potatoes shipped in carload lots from Los Andes, Chile, to Buenos Aires.——Alberto Risco has offered to donate to the city of Santiago 100,000 square meters of land within the limits of the municipality to be used for the construction of a STADIUM.——A group of Chilean capitalists are negotiating in Bolivia concerning the exploitation of PETROLEUM deposits situated in the departments of Santa Cruz, Sucre, and Tarija.——The National Agricultural Society of Chile proposes to participate in the ARGENTINE RURAL EXPOSITION, which will be held in Buenos Aires in August, 1916. Exhibits will be made of Chilean horses, fruits, plants, flowers, cereals, and other products.

COLOMBIA

The President of the Republic has appointed Salvador Franco, formerly secretary of the treasury, to the portfolio of MINISTER OF WAR, vice Dr. Antonio José Cadavid, resigned.——The National Government has established a PENAL COLONY on the banks of

the Magdalena River at the point where the Rio Negro flows into that stream.——According to telegraphic advices from the customs administrators to the Bureau of Statistics, the FOREIGN COMMERCE of Colombia in 1915 consisted of 292,374,508 kilos of merchandise, valued at $47,923,527, made up of 183,099,337 kilos of exports, valued at $29,265,349, and 109,275,171 kilos of imports, valued at $18,658,178.——A decree of February 17 last renders compulsory a year's MILITARY SERVICE on all Colombian citizens of military age and qualifications.——The press announces that the Government of Colombia has engaged the services of two expert sanitary engineers formerly employed in the Canal Zone to superintend the SANITATION WORKS of the port of Buenaventura on the Pacific coast.——The legislature of the Department of Cundinamarca has contracted for the construction of an AUTOMOBILE ROAD from a point on the Magdalena River to the city of Bogota.——Recently a shipment of mail from Bogota to Barranquilla, via La Dorada and from thence down the Magdalena River on the steamboat *Helena Montoya*, reached its destination in 53 hours, the quickest service on record up to the present time.——The President has approved plans submitted to the Government for the construction of a branch of the PACIFIC RAILWAY between Buga and Cartago. In 1915 the Pacific Railway handled 7,205,343 kilos of imports and 6,573,214 kilos of exports. The passengers transported during the same period were 55,369, or more than double the number carried during the previous year.——A BRIDGE having 16 arches and a length of 206 meters, over the Sonso River in the Department of Valle del Cauca, was opened to public traffic in February last.——The President has submitted to Congress a proposed bill prohibiting the establishment of LOTTERIES in the Republic.——The Colombian MARITIME NAVIGATION CO., of New York, has bought a vessel to be used in the service between Buenaventura and San Francisco, Cal.——The board of directors of the COLOMBIAN RED CROSS has elected Dr. Hipólito Machado, president; Joaquin Samper, vice president; and Luis Acevedo, secretary.——A PASSENGER AGENCY has been established in Barranquilla. Among other things useful to the traveling public, this agency will take charge of the moving of baggage, give information concerning the entrance and departure of vessels and trains, assist in obtaining tickets and hotel accommodations, and aid travelers in passing through Barranquilla with the least possible inconvenience, interruption, and delay.——An ASSOCIATION has been formed in Cartagena which has for its object the improvement of society, the betterment of education, and the development of the arts and industries of the nation.——The legislature of the Department of Bolivar is in favor of constructing a HIGHWAY from Cartagena to Santa Catalina, where it will connect with the road now being built in the Department of the Atlantic from Barranquilla to Cartagena.

COSTA RICA

The President has appointed Licentiate Juan Rafael Arias, the present Secretary of Home Affairs (Gobernación) and Police, ENVOY EXTRAORDINARY and Minister Plenipotentiary on a special mission to the Governments of Argentina, Brazil, and Chile, and Rogelio Fernandez Güell secretary of the commission. Messrs. Arias and Güell, as well as Manuel Aragon, represented Costa Rica in the International High Commission which met in Buenos Aires on April 3, 1915. Licentiate Claudio Gonzalez Rucardo has been appointed Acting Secretary of Home Affairs and Police during the absence of Señor Arias.——According to data published in La Nación, a daily newspaper of San Jose, the COFFEE CROP of the present year will amount to 260,000 sacks, of which 155,000 sacks have already been exported to Great Britain and 5,000 to the United States. Of the 100,000 remaining sacks, 65,000 will be sent to England and 35,000 to San Francisco, where Costa Rican coffee is highly prized and brings a good price. The exports of coffee to San Francisco in 1915 amounted to 10,000 sacks.——Alberto Echandi and Francisco Orlich, two Costa Rican contractors and business men, have commenced work on a hydroelectric LIGHT AND POWER PLANT in the city of San Ramon on the Barranca River. The plant will furnish power for a sawmill, a rope factory, and for other industrial purposes to persons and companies interested in various business enterprises in the vicinity. Light and power will also be supplied by this plant to the port of Puntarenas.——The municipality of Cartago has offered to donate 40 hectares of land for a TUBERCULOSIS SANITARIUM which the Government has decided to establish, and construction work will be commenced within a short time.——The department of public instruction has requested the police of San Jose to assist in compelling children of SCHOOL AGE, engaged in various occupations in that city, to attend the public schools.——The press of Costa Rica states that a syndicate of North American capitalists proposes to invest in Costa Rica a large amount of money in raising and fattening CATTLE FOR EXPORT, and to this end intends to buy or lease a large tract of well-watered land for grazing purposes.——In 1915 there were 50,948 treatments for the HOOKWORM disease in Costa Rica, and complete recovery was noted in nearly all of the cases. A vigorous campaign is being undertaken with the object of eradicating this disease in the Republic. At the present time eight special laboratories are equipped and

engaged in combatting this malady, and it is proposed, in the near future, to equip 10 more laboratories and to completely banish the disease from the country.——According to the Imparcial, an important daily newspaper of San Jose, the EXPORTS OF COFFEE up to March 5, 1916, amounted to 10,682,966 kilos of the crop of the present year and 12,206,357 kilos of last year's crop. The coffee production in 1916 is estimated at a third more than in 1915.

CUBA

A company has been organized by Charles Hernandez, Postmaster General of the Government of Cuba, to buy lands in Pinar del Rio to be used in the cultivation of the MEXICAN AGAVE. It is believed that the tobacco lands of Pinar del Rio are well suited to the growth of the plant from which henequen is secured, and that this industry will be most profitable, since henequen fiber is greatly in demand in the United States and Europe, where it is used in the manufacture of binder twine, sacks, cord, rope, sails, ship tackle, etc. The United States alone uses annually more than 150,000 tons of henequen fiber. The company has purchased about 170,000 acres of land at Cape Martinas and Remates, and proposes to engage in this industry on a large scale.—— During the latter part of March of the present year a steamer arrived at Habana from Buenos Aires and Montevideo laden with JERKED BEEF and 5,980 sacks of Indian corn. This is the first vessel arriving in Cuba from said ports within the last three months.——The city council has passed an ordinance changing the name of Zanjas Street in Habana to FINLAY STREET, in honor of Dr. Carlos J. Finlay, the noted Cuban physician and discoverer of the yellow-fever germ-carrying mosquito. A statue of Dr. Finlay was unveiled in the capital of the Republic on March 25, 1916.——C. C. Williams, formerly a United States marine officer and reputed to be one of the most expert shots in America, has been engaged by the Cuban army as INSTRUCTOR IN RIFLE PRACTICE.——According to information from the Department of Public Works the CLEVELAND HIGHWAY, between Nueva Gerona and McKinley, on the Isle of Pines, has been completed and opened to public traffic.——The MACEO STATUE, now being erected in Maceo Park, Habana, will be unveiled on May 20 next.——La Nación (The Nation) is the title of a new eight-page daily EVENING PAPER published in Habana.——The *Esperanza*, a 100-ton vessel built in Cienfuegos for use in the SUGAR TRADE by the Mapos Sugar Co., was placed in service during the first week of the present month.——Press reports

state that the Department of Sanitation of the Government of Cuba is considering a plan for building a LEPER HOSPITAL near the city of Habana, and that Congress will be requested to contribute $250,000 for this purpose.——The police authorities of the city of Habana, acting in accordance with the laws of Cuba and a municipal ordinance of the national capital, have ordered the arrest of all persons detected in the sale of immoral or OBSCENE NEWSPAPERS and magazines.——President Menocal has been invited to attend the launching of the NEW FERRYBOAT, *Joseph R. Parrott*, at Cramps Shipbuilding Works in Philadelphia in May next. This boat will be placed in commission in September, 1916, and will ply alternately with the *Henry M. Flagler* between Habana and Key West.—— On the suggestion of the Secretary of Public Works of the Government of Cuba, the commission has changed the site of the MAINE MONUMENT in Habana and has ordered the erection of the same at the intersection of the extended Malecon (pier) with Seventeenth Street. This site will enable the monument to be seen from Punta, Miramar, and along the entire length of the Malecon, and will furnish as a background the Chorrera Castle at the end of the pier.——A number of the principal ladies of Habana have formed an association having for its object the providing of work and HOMES FOR GIRLS who leave the various orphan asylums of the national capital.—— The Cuban Cane Corporation, which has purchased 17 large sugar centrals on the island, has decided to place in operation a NEW SUGAR CENTRAL, near Nipe Bay in eastern Cuba, with a capacity of 300,000 sacks. The new central, which bears the name of the Tacajo Sugar Co., will be ready for grinding about the last of the present year.

DOMINICAN REPUBLIC

According to the message which President Juan I. Jimenez submitted to the National Congress on February 27 last, and which reviews the principal events of the administration during the preceding year, the FOREIGN COMMERCE of the Dominican Republic in 1915 amounted to $24,327,575, the largest amount ever recorded in the history of the country. This is an increase over the foreign commerce of 1914 of $7,009,779, the amount of the commerce of that year having been $17,317,796. The foreign commerce of 1915 was made up of imports, $15,209,061, and exports, $9,118,514, or an excess of imports over exports of $6,090,547.——The CUSTOMS REVENUES of the Dominican Republic in 1915 amounted to $3,882,048, as compared with $3,094,585 in 1914, or an increase in 1915 of $787,463.

The customs revenues in detail in 1915 were as follows: Imports, $3,555,225; exports, $231,951; and port dues, $94,872.——The Listin Diario, an important daily newspaper published in the city of Santo Domingo, announces that the executive power entered into a contract on January 24 of the present year with Julio Coiscou for the construction and equipment of a RAILWAY from the capital of the Republic to the city of San Pedro de Macoris.——A recent executive decree orders the official compilation of a new edition of the civil, commercial, criminal, penal, and military CODES of the Republic, and that there be added thereto all executive decrees which repeal, modify, or form any part of the national codes. The compilation, editing, and printing of these codes have been placed under the direction of the Department of Justice and Public Instruction of the Government of the Dominican Republic.——The Government of the Dominican Republic has engaged for two years the services of William V. van Blarcoin, a North American civil engineer, to take charge of the reconstruction and operation of the Central Dominican RAILWAY. The engineer in question is said to have had a large experience in railway construction, and from 1907 to 1914 was American inspector of the Philippine railways. Only Dominican citizens are to be employed in the work, except where it may be necessary to use foreigners for technical positions for which no Dominicans are available.——Tancredo Castellanos, senator from the province of Puerto Plata, has introduced into Congress a bill which prescribes that for a period of three years all persons, societies, and companies which establish a new AGRICULTURAL INDUSTRY in the country shall have the right to import free of duty machinery, apparatus, implements, tools, railway rolling stock and supplies, water pipe and accessories, vehicles of all kinds for transportation of products, and construction materials for use in the exploitation of the industry referred to.

ECUADOR

According to a report of the water-supply commission of Guayaquil, submitted by the consul of Great Britain at that port to the English fire insurance companies doing business in Ecuador, the PUMPING STATION at Guayaquil, which was opened to public service on January 1, 1905, now has at the disposal of the fire department of that municipality 322 fire plugs in different parts of the city. The water-supply station is provided with three Babcock & Wilcox boilers of 350 horsepower each; three Worthington-Underwriter pumps, each of which has a capacity of 1,500 gallons of water per

minute, and so arranged as to operate jointly or separately; three vertical hot-water heaters to convey hot water to the boilers; and three dynamos for generating electricity with which to light the plant. The establishment is also provided with a repair shop. The water pipes in the city have a length of 6 kilometers and sustain a permanent pressure of 60 pounds, which, in case of fire, may be increased to 150 pounds. The water is brought from the supply tanks on Santa Ana Hill, 33 meters above the city. The installation has three reserve tanks situated on the highest part of Santa Ana Hill at an elevation of 92 meters. These tanks have a capacity of 4,000,000 liters of water, develop 135 pounds of pressure, and in case of fire could furnish the maximum amount of water for two hours in succession. There was no large fire in Guayaquil in 1915, and only three small and easily managed ones during that year. There are few cities in the world of the size of Guayaquil which have such a complete and efficient fire department.——The JUAN MONTALVO COMMITTEE has been organized at Ambato for the purpose of having removed to that city, should it be deemed advisable, the remains of this famous Ecuadorian author; or, should this not be considered desirable, then to raise funds with which to erect in the city of Guayaquil a monument and sarcophagus in which to preserve the ashes of this illustrious Ecuadorian scholar and patriot.——The PUBLIC HEALTH Bureau of Guayaquil has issued new rules and regulations for preventing the occurrence and spread of yellow fever.——Inasmuch as the manufacture of SALT at the Charapato Government salt works requires a larger outlay in producing the refined product than when manufactured at other Government plants, the President has authorized the sale of Charapato salt at 1 centavo (one-half cent) per kilo.——In May next the FIRST CONGRESS OF CATECHETICS of Ecuador will meet in Quito to consider, among other things, methods of education, Christian culture, and morality among the Indians of the Republic.——The customhouse at Bahia de Caraquez produced in 1915 CUSTOMS REVENUES amounting to 476,777 sucres (sucre=$0.4867).——A recent executive decree fixes the amount of the TELEGRAPH AND TELEPHONE BUDGET for 1915 at 562,184 sucres.——In February last the exports from Guayaquil consisted of 31,890 sacks of CACAO weighing 2,605,348 kilos, 10,640 sacks of which were for New York, 5,450 for Havre, 4,863 for Liverpool, 1,500 for San Francisco, and 9,437 for other ports. Other exports from this port during the same period were as follows: Coffee, 156,082 kilos; rubber, 4,818 kilos; tagua or vegetable ivory, 50,500 kilos; and hides, 136,657 kilos.——The National Government has granted Cesar Daniel Andrade a concession for 10 years for the extraction in the Republic of the alkaloids contained in the CINCHONA BARK.

GUATEMALA

According to data taken from a recent message of President Manuel Estrada Cabrera, the POSTAL SERVICE of Guatemala in 1915 gave employment to 1,664 persons. During that year seven new post offices were established and eight were raised in rank. The mail handled in 1915 aggregated 15,992,616 pieces. The number of foreign postal packages issued during the same period was 2,734, and the number received 16,650, or a total handled of 18,384. The gross receipts of the Department of Posts in 1915 were 1,389,984 pesos, and the total expenditures 1,226,787 pesos, which left a net profit of 163,197 pesos.——In 1915 there were 245 TELEGRAPH offices in operation in the Republic, employing 1,233 persons and having lines aggregating 6,755 kilometers in length. The telephone system had 101 offices and lines under operation, having an extent of 376 kilometers. During 1915 eleven new telegraph lines representing a length of 245 kilometers, and one telephone line 26 kilometers long were strung. The telegraph messages transmitted in 1915 numbered 1,626,866, or 268,240 messages more than in 1914. The number of cablegrams transmitted during the past year was 7,263, and the charges for telegrams in 1915 were 4,600,328 pesos.——During the past year the URBAN RAILWAY transported 2,984,950 passengers.——PUBLIC INSTRUCTION in all lines underwent a satisfactory development in 1915. The matriculates of primary schools during that year numbered 65,904, and 21 new schools were established, which, added to the 1,878 existing in 1914, made a total of 1,899 schools in operation in Guatemala at the beginning of the present year.——The FOREIGN COMMERCE of Guatemala in 1915 amounted to $16,639,062 gold, made up of imports, $5,072,476, and exports, $11,566,586, or an excess of exports over imports of $6,494,110, or $3,051,197 more than in 1914.——The NATIONAL REVENUES IN 1915 amounted to 85,007,705 pesos, and the expenditures to 67,841,284 pesos, so that the excess of receipts over expenditures was 17,166,241 pesos.——A COMMERCIAL TREATY has been concluded between the Kingdom of Italy and the Republic of Guatemala on conditions mutually favorable to both nations, and it is expected that this treaty will greatly stimulate the commerce carried on between the two countries.——A legislative decree of March 15 last officially proclaims the election of MANUEL ESTRADA CABRERA as President of the Republic of Guatemala for the constitutional period beginning March 15, 1917, and ending on the same date in 1923, as provided by article 66 of the constitution, which prescribes that the term of office of the President shall be six years.——The

National Legislative Assembly has also declared elected the following justices of the SUPREME COURT for the period beginning March 15, 1915, and terminating on March 15, 1920: Licentiate Antonio Batres Jaureguui, chief justice, and Licentiates Jose A. Beteta, Manuel Klee, J. Antonio Godoy, and Quirinio Flores, justices.

HAITI

The Secretary of the Treasury of the United States has appointed the following committee to study and report upon the measures which the Republic of Haiti should adopt in developing CLOSER COMMERCIAL RELATIONS between the two countries: Edward Hibbon, president of the Business Men's Club of St. Louis, chairman; Maj. Gen. W. C. Gorgas, of the United States Army; E. R. Grabow, of the United Fruit Co., Baltimore; S. M. Hastings, president of the Manufacturers' Association of Illinois, Chicago; and Leon C. Simon, of New Orleans.——In February last a COMMISSION ON HYGIENE, appointed by the National Government, was organized in Port au Prince to render a detailed report on the sanitary condition of the country and the means which should be employed to improve same. The commission will also study the bases for the establishment and organization of a general public health office under the direction of the Department of the Interior, will formulate general hygienic rules and regulations for the guidance of the people and police force of Port au Prince, and will indicate the sanitary works which should be undertaken throughout the Republic, and submit an estimate of the cost of same to the National Government. The commission is composed of the director and a number of the professors of the National School of Medicine and Pharmacy, the director of the Board of Health, and the port physician of the National Capital.——An executive decree authorizes the BANKING COMPANY called "Le Comptoir Français," with headquarters at Havre, France, to do business in the Republic.——On March 11 last the *Tennessee*, an American warship conveying the delegation of the United States to the High International Commission, which met in Buenos Aires on the 3d of the present month, arrived at Port au Prince. Secretary William G. McAdoo, chairman of the delegation, together with the other delegates, called upon President Dartiguenave and discussed the importance of encouraging more intimate trade relations between Haiti and the United States. After visiting the city and its suburbs, including the Dessalines Barracks and Leconte Park, the party reembarked and proceeded on its journey to the Argentine Republic.——According to data taken from Le Nouvelliste, an important daily

newspaper of Port au Prince, up to March 13, 1916, there had been incinerated 1,576,750 gourdes in BANK NOTES of the denomination of 5 gourdes (paper gourde = $0.20) out of a total issue of 2,000,000 gourdes which were put in circulation some time ago, so that now there remains outstanding of this issue 423,260 gourdes.——The HAITIAN SHIPS *Nord Alexis* and *Pacifique* are soon to be sold at public auction in accordance with a decree of the Navy Department.——A private SCHOOL called "Washington College" was recently established at Cayes.——The press announces that within a short time American capital will erect and operate two factories, one on the plain of Cul de Sac and the other near the town of St. Mark for the extraction of CAMPECHE DYES.——A number of North American agronomists recently made an extended tour through the Republic and on the completion of the same expressed great admiration of the fertility of the soil and natural wealth of the country, and stated that they expected to invest in the Republic, in the near future, $2,000,000 in the development of SUGAR PLANTATIONS, railways, and other important works.——Work has begun on the SANITARY AND DREDGING WORKS of the port of the national capital. Most of the dredging at present is being done in the neighborhood of the wharf.——The RATE OF EXCHANGE for the paper gourde with respect to American gold has been fixed at 5 gourdes for each gold dollar.——A new NEWSPAPER, entitled "La Revue," is being published at Jacmel under the direction of Ernest Bellande. It will treat of commerce, statistics, local and foreign news, and matters of national interest.

HONDURAS

According to official data recently published by the Government of Honduras the PUBLIC DEBT of that country on July 31, 1914, amounted to 4,877,894 pesos (peso = 0.3537). On January 1, 1916, the debt had been reduced 712,419 pesos, making the total debt of the Republic at the beginning of the present year 4,165,475 pesos.——In 1915 TELEGRAPH lines were constructed in Honduras aggregating a length of 632 kilometers, which, added to the lines existing prior to that time, makes the total length of the telegraph system of the country on January 1, 1916, 7,830 kilometers.——The FOREIGN COMMERCE of Honduras for the fiscal year 1914–15 amounted to $9,332,637 gold, consisting of imports, $5,874,780, and exports, $3,457,857, or an excess of imports over exports of $2,416,923. The United States occupied the first place both in imports and exports.——The National Congress has sanctioned a contract made between the executive power and Ricardo Sussmann, under the terms

of which the latter leases for five years the Puerto Sal COCONUT GROVES, paying for same a rental of 4,100 pesos (pesos = $0.3537) annually. The lessee agrees to set out yearly at least 3,150 coconut plants, and is subject to a fine of $0.75 gold for each coconut plant less than that number which he fails to set out. The coconut grove is situated between Barra de Cuero (Leather Bar) and the mouth of the Ulua River, in the district of Tela, Department of Atlantida.——The committee appointed by the Government to inspect the WHARF which the Tela Railway Co. has just completed at the port of the same name, states that the wharf was erected in accordance with the plans approved by the President in 1913. The wharf is 606 meters long and 14 meters wide at the end which terminates in the sea, and is capable of accommodating the largest seagoing vessels which touch at that port. It is solidly built and is said to be one of the largest and best-equipped wharves in Central America.——The TELA RAILWAY CO. now has 150 kilometers of line in operation, 113 of which are branches and 37 belong to the main line. In addition to this the company has 22 kilometers of grading ready for the laying of the rails. In 1915 this railway carried 1,362 passengers, 14,134 tons of general freight, and 840,000 bunches of bananas. The rolling stock of the line consists of 8 locomotives, 7 gasoline trolleys, 3 passenger coaches, 1 baggage and postal car, and 122 freight cars. The company has built 96 kilometers of telephone line; a large hospital, costing 200,000 pesos; a washhouse; a dining hall; a customs building; 12 dwellings for employees, 5 for laborers, and 1 for storage purposes. The entire holdings of the Tela Railway Co., including the wharf, which is valued at $300,000, are appraised at $3,000,000.——The National Congress has just enacted a law concerning the official INSPECTION OF BANKS OF ISSUE, which was submitted to the Congress, through the President of the Republic, at the suggestion of the Secretary of the Treasury. The law provides for a bank inspector, who is required to report monthly on bank notes issued and in circulation, on deposits subject to sight drafts, on the amount of coin on hand in the vaults of the banks, and upon bank balances.——In 1915 the National Government expended the sum of 432,811 pesos in the construction of CART ROADS—one from the Pacific coast to the capital of the Republic, another from Olancho to Tegucigalpa, and a third from the National Capital, via Comayagua, in the direction of the National Railway.——In 1915 the Government granted 10 titles to MINES representing an area of 5,680 hectares. Up to January 1 of the present year mining titles have been issued covering an area of 60,412 hectares.——Dr. Julian Lopez Pineda, director of El Nuevo Tiempo, a daily newspaper of Tegucigalpa, proposes to establish in the national capital a PUBLICITY BUREAU and a modern daily newspaper having for its contributors the best literary talent of the country.

MEXICO

Since the beginning of the present year the SUGAR-CANE harvest has been in progress in the State of Vera Cruz, and the grinding season is now at its height in that Commonwealth. The scarcity of labor on the plantations located in that State has, to a certain extent, rendered difficult and at times delayed the cutting, handling, and grinding of the cane. While reports indicate that the production of sugar in the State of Vera Cruz during the present year will be somewhat less than that of normal years, the cane growers, owing to the increased price of sugar, will probably receive a larger money return for their output than that realized during the previous year.——The Department of Fomento (Encouragement) has decided to establish a NURSERY OF TROPICAL PLANTS in one of the States of the Republic bordering on the Gulf of Mexico. A principal feature of this nursery will be to furnish to small agriculturists the most desirable varieties of tropical food plants suitable for cultivation on the east coast of Mexico, such, for instance, as bananas, mangos, pineapples, alligator pears, lemons, oranges, etc.——The DRAINAGE OF LAKE CHAPALA, a body of water 80 miles in length by 30 in breadth, lying between the States of Michoacan and Guadalajara, is being carried out under the direction of the Department of Fomento, Colonization and Industry, following plans similar to those employed in draining Lake Texcoco. A large part of Lake Chapala, and especially the shallower part, is a tangle of water lilies, and when drained will leave exposed and ready for cultivation a considerable area of land of great richness especially suited to the growing of celery and similar crops. The drainage work is under the immediate direction of Sr. Rouaix, a civil engineer.——The governor of the State of Vera Cruz has issued a decree providing for the removal of the CAPITAL of that Commonwealth, now located in the city of Vera Cruz, to Orizaba. The latter place has one of the most delightful and salubrious climates in the world, is abundantly supplied with potable water, and is an ideal location for the establishment of the State capital. The city itself is an industrial center of great importance, and is especially noted for its cloth and paper factories.—— It is estimated that in 1915 the Republic of Mexico produced 1,470,420,000 gallons of PETROLEUM.——Under date of March 13, 1916, the Government of the State of Vera Cruz granted authority to Francisco M. Semple to establish a PIPE LINE 28 miles long from the Tampascas oil fields in the Canton of Ozuluama, State of Vera Cruz, to Tuxpam. Mr. Semple also has permission to operate a gas-pipe line and a telephone and telegraph line.——The Nueva Diana MINING Co. of Lampazos, State of Nuevo Leon, has estab-

lished a store, in which provisions and merchandise are furnished the laborers and employees of the company at cost.——A RAILWAY is being built from Cienega del Toro. The new line will pass through one of the richest agricultural sections of the State of Coahuila.——A National SCHOOL OF DOMESTIC ARTS for women has been founded in the city of Mexico by the Department of Public Instruction. The school is patterned after the Swiss schools of domestic science for women.——A decree has been issued by the governor of the State of Jalisco prohibiting the sale of REAL PROPERTY to foreigners, or the making of mortgages in favor of foreigners in that Commonwealth, without the permission of the governor of the State.

NICARAGUA

The Gaceta Oficial (Official Gazette) of the Government of Nicaragua, publishes in its edition of February 16, 1916, a decree permitting, on and after that date, the introduction of CRUDE PETROLEUM into the Republic free from the payment of general and local duties and imposts for a period of two years, with the exception of storage, porterage, and wharfage charges.——According to a report of Cornelius Ferris, jr., American consul at Bluefields, the imports of blank and printed books, printing paper, and surface-coated paper in 1914 amounted to $67,444, as compared with $81,772 in 1913.——Reports from Managua, published in The American, of Bluefields, state that the Pacific Railroad Co. proposes to construct a RAILROAD TO THE ATLANTIC COAST on the following principal bases: The work to be completed within four years, the Government to grant a six-months option in which to make studies and plans, and at least 50 miles of track to be completed each year. The company asks 2,000 hectares of land for each mile of railroad built. The proposal will be submitted to the consideration of the National Congress.——Dr. Aníbal Zelaya, a Nicaraguan physician residing in New York, has been appointed an active member of the faculty of the MEDICAL DEPARTMENT of the University of Columbia in the city of New York.——Construction work has been commenced on a PUBLIC HIGHWAY which is to be built from the interior of the Republic to Bluefields. The road is planned to run from Granada via Trinidad, Obregon, La Salvadora, El Torno, Almendro, San Pancho, and Morrito.——The first cargo of cedar and mahogany LUMBER exported from the Atlantic coast of Nicaragua was shipped from Schooner Cay to Philadelphia on March 27, 1916.——Villa de Metapa, the BIRTHPLACE OF RUBÉN DARÍO, the lamented Nicaraguan poet, has been raised to the rank of a city by an act of the National Legislative Assembly.——Machinery from the United States required

for the ICE FACTORY at Matagalpa has arrived at that place, and will soon be set up and ready for operation. The factory proposes to supply Matagalpa and the neighboring towns with ice.——A factory for the manufacture of BAR SOAP has just been completed at Boaco in a district capable of furnishing an abundance of vegetable oils suitable for soap making.——Early in March of the present year work was commenced on the SANITATION PROJECT of the port of Corinto under the direction of Luis de la Peña, a practical sanitary engineer, who has had experience in the United States and Europe.——According to D. B. Brown, the North American civil engineer who prepared the plans for the RAILWAY which it is proposed to build to the Gulf of Fonseca, the length of the line to the point known as San Jose will be 83 kilometers. The road will have five large bridges and will traverse a rich agricultural, mining, and timbered country.

PANAMA

According to data published by the Central Registration Office of the Government of Panama there were 1,296 BIRTHS and 967 deaths in the Republic in January and February of the present year. The greatest number of births occurred in the Province of Panama, where, during the period referred to, the total aggregated 631.——An executive decree concerning IMMIGRATION and naturalization prescribes that, in addition to the requirements as to proof of domicile, the parties in interest must prove by a certificate of registration that they have complied with article 12 of the law of December 12, 1912. The deposit made by the immigrant will be returned to him after he has found employment. Immigrant workmen who contract to labor on the Canal Zone or for the Panama Railway are exempt from the provisions of this decree, as are foreign agriculturists brought over by the Government, and persons whose services have been contracted for by individuals and firms doing business in the Republic. Foreigners who suffer from physical defects to the extent of incapacitating them from earning a livelihood will not be permitted to enter the Isthmus unless provided with means by which to maintain themselves. To obtain naturalization papers the candidate must have resided the required time in the country, must be of good character, and fulfill in other respects the requirements of the naturalization law.——The Provident Life & Trust Corporation of Panama, with a capital stock of $1,000,000, has established its main office in the city of Panama. The corporation is authorized to engage in LIFE INSURANCE and to assume all kinds of fiduciary obligations either in or out of the Republic. The officers of the company are as

follows: Emile C. Bataille, president; Edward J. Williams, vice president; S. S. Simpson, secretary and manager; and Henry Bloomer, treasurer.——Press announcements state that the California South Sea Navigation Co. of San Francisco has established a fortnightly STEAMSHIP FREIGHT SERVICE between San Francisco and the port of Panama, with stops at the principal Central American ports. These vessels will receive freight consigned to New Orleans and New York at the same rates as are charged by other lines.——The net profits obtained by the BANK OF PANAMA from 1912 to 1915, inclusive, were as follows: In 1912, 51,724 balboas; in 1913, 52,602 balboas; in 1914, 47,375 balboas; and in 1915, 87,541 balboas.——The publication entitled "Petróleo" (Petroleum) contains an interesting article in its edition of February 5 last, in which it is contended that there is not now and never can be a monopoly in FUEL OILS at Panama because of the large number of companies representing oil regions in different parts of the world engaged in the sale of petroleum on the Isthmus, and that the chances are that a strong competition in the sale of this article will continue to exist indefinitely.

PARAGUAY

An executive decree of March 17 last provides that exports and imports which are not in the list of nondutiable articles shall pay a SURCHARGE of one-half per cent on imports and 1 per cent on exports. Customs administrators are required to keep the amount of this tax separate from the regular duties, and the sum collected will be placed in a separate fund and put at the disposal of the Government for charitable and other purposes.——The National Congress has enacted a law prescribing COMPULSORY MILITARY SERVICE for all Paraguayan citizens of military age and qualifications. Eligible citizens of from 18 to 28 years must serve in the regular army or navy, and citizens of from 28 to 45 years in the reserve. The reserve is divided into three classes—namely, (1) from 20 to 29 years of age, the reserve of the regular army; (2) from 29 to 39, the national guard; and (3) from 39 to 45 years of age, the territorial guard.——A long-distance WIRELESS telegraph station was opened to public service in the city of Encarnacion on February 15 last.——In 1915 the SUGAR CANE plantations of the Republic produced 1,536,377 kilos of sugar, as compared with 2,559,000 kilos in 1914. The lower production in 1915 was due to the long-continued rains during the growing season, which produced a cane that yielded only 4.2 per cent of its weight in sugar, while in 1914 the percentage of yield was 5.5 per cent. The production of sugar in kilos in different parts of the Republic in 1915 was as follows: Ybytymi, 1,172,707;

Villa Hayes (Chaco), 147,750; San Luis de la Frontera, 39,920; Villarica, 70,000; Guarambare, 64,000; and Concepcion, 42,000. The imports of sugar into Paraguay last year amounted to 1,546,127 kilos.——A recent executive decree prescribes a two-year course for the MILITARY SCHOOL of the Republic. The school is in charge of a director in chief and such assistants as may be deemed necessary.——A legislative decree continues in force the BUDGET for 1915 during the first six months of the present year.——The National Congress has enacted a law which provides for the establishment of an EXCHANGE OFFICE to buy and sell sealed gold (coin), and issue, exchange, and convert bank notes. The office will be in charge of five members appointed by the President and approved by the Senate. The law provides for the calling in of the present issue of paper money and nickel coin and exchanging them for a new issue. The rate of conversion is to be determined by a later law of the National Congress.——The term of President Eduardo Schaerer expires on August 15, 1916. On May 7 of the present year an election will be held in the 20 electoral districts of Paraguay for electors to choose a PRESIDENT and vice president to fill the thirteenth constitutional presidential period of four years. On June 11, 1916, the presidential electors chosen at the May election referred to will elect a president and vice president of the Republic.

An executive decree of March 15, 1915, provides that communications referring to the enforcement of the laws concerning customs duties, taxes, and Government monopolies, shall be addressed to the Government through the CUSTOMS AND TAX BUREAU established in accordance with the provisions of the general budget of the Republic.——The President has appointed Manuel G. Montero y Tirado FINANCIAL AGENT of the Government of Peru in the United States, where he proposes to negotiate a loan with the object of consolidating the debt of Peru.——The Executive has appointed a commission consisting of the director of the corps of civil engineers, the captain of the port of Callao, the director of the customs guards, and the postmaster of said port, to study, report upon, and recommend improvements and extensions in the freight, postal, and other WHARVES required for the quick and proper handling of the customs business of the port of Callao.——Mannucci & Armas have established a MATCH FACTORY, equipped with all modern improvements, at Trujillo. This factory is beginning to turn out on a small scale a good quality of matches.——In view of the fact that neither the patent laws of the country nor the decrees regulating the same

define a DOMESTIC PATENT, the President of the Republic decreed, under date of February 25 last, that any invention or discovery made in Peru and not patented prior thereto in any foreign country, even though the inventor be a foreigner, provided he is domiciled in the Republic in accordance with the provisions of article 46 of the Civil Code, shall be considered a domestic patent. This also applies to inventions or discoveries made in foreign countries by Peruvians.——A recent legislative decree authorizes the President of the Republic, during the negotiations for the placing of a foreign loan with which to fund the debt of the nation, to pay £270,462 from the proceeds of the export tax to cover the INTEREST ON THE INTERNAL DEBT and to liquidate various amounts owing to banks and to private companies.——The press of Lima advises that the representative of a large North American corporation engaged in the installation and manufacture of WIRELESS telegraph supplies is investigating the advantages which Lima offers for the erection of a wireless station in the vicinity of that capital sufficiently powerful to communicate with the United States and Europe.——El Sol, a daily newspaper of Cuzco, announces that the National Government has bought SILVER BULLION to the value of £20,000 to be coined into Peruvian soles.——The London & Pacific Petroleum Co. is fitting up a large modern REFINERY at Talara with a daily capacity of 4,000 barrels of oil. It is proposed to supply oil as a fuel to steamships and industrial enterprises along the Pacific coast of South America. The company is working a number of wells, and intends to develop on a large scale the oil zone of that vicinity, which occupies an area of 1,300 square kilometers. This company has been working the oil fields of Peru since 1886, and at the present time is in a very prosperous condition. The principal holdings of the company are at Negritos. These consist of 750 wells, 450 of which are producing. This company bored 34 wells last year and extracted 15,000 tons of petroleum monthly. Negritos has 4,500 inhabitants and there are 1,500 workmen at Talara.

SALVADOR

In 1915 the SUPREME COURT OF JUSTICE and its sectional divisions rendered 431 final judgments, 3,478 interlocutory judgments, 5,210 affirmatory decrees, 771 writs of discovery, and considered 54 reports.——The HOSPITALS of the Republic treated during the past year 35,608 persons, of whom 31,042 were discharged as cured, 2,035 died, and 2,531 were still receiving treatment at the beginning of the present year.——A bill has been introduced into the National Congress under the terms of which the departmental governors are

required to give special attention to the CULTIVATION OF WHEAT on lands suitable for this purpose under their respective jurisdictions. The bill authorizes the department of agriculture to secure seed wheat to be distributed in their propaganda work, and provides a bounty of 10 pesos (peso = $0.3537) for each hectare of land sown to this cereal, and exempts exports of wheat and flour made from domestic wheat from export and other taxes for a period of 20 years from January 1, 1917.——According to data published by the Bureau of Statistics of the Government of Salvador, the imports of WHEAT FLOUR into the Republic in 1915 aggregated 6,630,496 kilos, valued at $392,772 gold, as compared with 6,630,029 kilos, valued at $310,051 gold, in 1914.——The Society of American Studies of Salvador (Sociedad de Estudios Americanistas) has decided to found a MAGAZINE to publish exclusively articles and matter referring to the work of the society. The director of the magazine is Alberto Masferrer; the editor, Manuel Imery; and the secretary, Juan Ramon Uriarte.——The Government of Salvador has accepted the offer of two SCHOLARSHIPS in the Heredia Normal College, made by the Government of Costa Rica to Salvadoran students. The college referred to is under the direction of the learned Costa Rican educator and former Minister of the Government of Costa Rica in Washington, Roberto Brenes Mesen.——In 1915, according to a report of the Bureau of Education, the Government of Salvador spent 1,182,880 peso (peso = $0.3537), not including the cost of charity schools, in PUBLIC INSTRUCTION.——In order to encourage building operations in the Republic, the Government has authorized the free importation of CEMENT AND IRON BARS for construction purposes. A prior decree permits the free importation of lumber, so that now the most important materials used in the construction of buildings may be brought into the country free of duty.——José M. Aguado has requested permission from the National Congress to establish AUTOMOBILE SERVICE for freight and passenger traffic between all the cities and towns of the Republic which have good roads. The petitoner offers, if the service is established, to give the Government a discount of 25 per cent from the regular schedule of charges, on merchandise received for transportation from the eastern, western, and southern railways, and in case of war a 50 per cent discount from the tariff rates on Government shipments for the army. The Government is also to be charged a low rate for carrying the mails. The automobile company requests permission to import free of duty automobiles and parts thereof, tires, gasoline, oil, grease, cables, and other articles used by the company in the operation of its business, and asks that its employees be exempted from Government service even in case of war. The concession asked for is to extend over a period of 10 years, with the privilege of renewal if mutually satis-

factory to the parties in interest.——During the latter part of February of the present year the President inaugurated in the city of San Salvador a SCHOOL FOR THE CORRECTION OF MINORS.

URUGUAY

On February 15 last President Feliciano Viera delivered an interesting MESSAGE to the National Congress, in which he stated that during the six months from July to December, 1915, the REVENUES of the Government amounted to 12,538,873 pesos (peso = $1.0342), as compared with 9,126,782 pesos collected in the same period of 1914. The gold reserve of the Bank of the Republic on January 15, 1915, was 22,000,000 pesos, as compared with 13,465,000 pesos on the same date in 1914. The bank notes of this bank in circulation on January 15, 1915, amounted to 25,600,000 pesos, as compared with 20,450,000 pesos in circulation on the same date in 1914. The proportion between the gold reserve and the bank notes, plus liabilities at sight, was 67 per cent in 1915 as compared with 48.4 per cent in 1914.——The Monthly Bulletin of the Ministry of Finance publishes a statement showing that the FOREIGN COMMERCE of Uruguay during the last two years was as follows: Imports, 1914 and 1915, respectively, 37,234,877 and 34,979,639 pesos; exports, 1914 and 1915, respectively, 58,233,699 and 73,290,671 pesos. The excess of exports over imports during the two years referred to was, therefore, 59,309,854 pesos (peso = $1.0342).——The President of the Republic has promulgated the rules and regulations formulated by the Administrative Council of the port of Montevideo concerning the DOCKAGE OF VESSELS. Ocean steamers are permitted to use, free of charge, the moles and quay sides of the docks in the loading and unloading of freight, the embarking and disembarking of passengers, and in the delivery and receipt of provisions and mails. Vessels desiring to anchor in the anteport and lade and unlade therefrom must pay lighterage at the rate of 1 peso (peso = $1.0342) per ton in the case of foreign freight and 50 centavos per ton in the case of domestic or coastwise freight. Parcels exceeding 2,000 kilos in weight shall pay double lighterage charges. Vessels having dangerous explosives or inflammable freight may be required to anchor in the anteport, if the authorities should so elect, and in this case are exempt from lighterage charges. These rules and regulations became effective on April 18, 1916, or 60 days after the date of their approval by President Viera.——The Institute of Geology of the Government of Uruguay has published a report showing that deposits of IRON MANGANESE have been found near Nico Perez in the Department of Florida; in the Yman, Papaguay, and Zapucay

Mountains in the Department of Rivera; and in the Departments of Minas, Paysandu, and Rocha. The same publication also states that iron ore exists at Santa Lucia in the Department of Minas, and that there are gold-bearing ores at Corrales, Department of Rivera, and auriferous quartz veins at a number of places in the Department of Tacuarembo.——On December 27, 1915, the Congress of Uruguay enacted a law authorizing the President of the Republic to expend a sum not to exceed 300,000 pesos in the construction of ROADS during the fiscal year 1915–16.——The commission appointed by the President of the Republic to investigate the feasibility of undertaking IRRIGATION PROJECTS in different parts of the country reports that the Sierra de Maldonado zone on the Solis Grande River is so situated that water can be easily distributed by force of gravitation over 15,000 hectares of fertile lands by constructing works requiring an outlay of not over 500,000 pesos, and that the water used for irrigation purposes can be made to generate on its way to the irrigated lands electric energy representing 1,500 horsepower.——A law has been enacted requiring that buildings constructed on public highways or avenues outside of the city of Montevideo and other large cities of the Republic shall be at least 10 meters from the nearest edge of said highways. Buildings erected on streets or avenues within the city of Montevideo and other large cities of the Republic must be at least 4 meters from the nearest boundary line of said thoroughfares.——La Blanca cold-storage works at Buenos Aires is negotiating for the establishment of a REFRIGERATING PLANT at Montevideo. It is understood that Congress is disposed to extend for a period of five years the privileges now granted in Uruguay to cold-storage and refrigerating plants, and this fact has tended to stimulate and encourage the chilled-meat industry of the Republic.

VENEZUELA

El Universal, a daily newspaper of Caracas, in its issue of March 11 last, announces that the first AUTOMOBILE TRIP across the Zamora plains from Barquisimento to Libertad de Barinas, a distance of 320 kilometers, was made without any accident or inconvenience whatever.——The RAILWAYS of the Republic transported during the past year 808,803 passengers and 280,621 kilos of freight. The gross receipts of these railways in 1915 were 12,527,854 bolívares (1 bolivar equals $0.193) and the expenditures 7,202,551 bolívares, or a net gain during the period referred to of 5,325,303 bolívares.——The Gaceta Oficial (Official Gazette) publishes an extra edition, under date of March 8 last, containing the full Spanish text of the rules and

REGULATIONS FOR THE WORKING OF MINES issued by the President of the Republic with the unanimous approval of the cabinet. The decree contains six chapters and 289 articles.——The President has ordered the erection of a building at the port of Maracaibo for the STORAGE OF SALT. Rafael S. Cook has been authorized to build this warehouse after plans and estimates submitted by him have been approved by the Department of Public Works.——A company has been organized in Caracas with a capital of $250,000 gold, the object of which is to make use of the vegetable substances of the Republic which are of commercial value for the extraction of TANNIN. While there are many plants in Venezuela which contain tannin, although no one species is so widely distributed or abundant as the quebracho or ironwood of the Argentine Republic, there are numerous plants, such as the dividivi, red mangrove tree, playa grape, and the plant known as "cují," which are said to have a greater proportion of tannin than the quebracho of the Argentine Republic. According to analyses made by a Venezuelan chemist, the dividivi of that Republic contains on an average 45 per cent of tannic acid and the red mangrove, which is so plentiful on the eastern coast of the country, 32 per cent in the bark and 22 per cent in the leaves. The playa grape, which is very abundant in Venezuela, is exploited in a similar manner to the quebracho of the Argentine Republic, and in the West Indies an extract is prepared from it which contains 50 per cent of tannin. In addition to these plants there are many others in Venezuela the barks and fruits of which contain tannin, said to be available in commercial quantities.——The State of Sucre is encouraging agriculturists to engage in the CULTIVATION OF COTTON on a large scale by providing seed for the first planting. A good price is obtained for cotton in Venezuela, and the quantity raised in the country is insufficient to supply the demand. The State of Sucre has a climate and soil particularly favorable to the growing of this fiber.——Officers of the Fluvial and COASTWISE NAVIGATION CO. of Venezuela have submitted a report to a general meeting of the stockholders of that corporation showing that the net profits of the company during the second half of 1915 were 762,278 bolívares. Within the six months referred to the company declared six dividends of 1 per cent each, representing a value of 360,000 bolívares. The reserve fund of this corporation increased during the period mentioned by 40,264 bolívares, making the total reserve fund at the beginning of the year 196,106 bolivares. The president of the board of directors is Bernardino Mosquera, and the secretary, S. Alvarez Michaud.——Construction work has been commenced on the HIGHWAY which is planned to be built from Altagracias to Caracas. The road from San Antonio to Las Adjuntas is also under construction and will soon be completed and opened to public traffic.

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Nicaragua .....Señor Dr. JOAQUÍN CUADRA ZAVALA.
Office of Legation, "Stoneleigh Court," Washington, D. C.
Panama.....Señor Don J. E. LEFEVRE,
Office of Legation, "Stoneleigh Court," Washington, D. C.
Peru.....Señor Don MANUEL DE FREYRE Y SANTANDER,
Office of Legation, 1737 H Street, Washington, D. C.

[1]Absent.

Courtesy of Bohemia.

JUAN PABLO DUARTE.

Duarte was the founder of the Dominican Republic, for chiefly to him was due the success of the uprising on February 27, 1844, the date which the Dominican people consider as the beginning of their political independence. This picture shows the marble bust of the great patriot, a gift from the Dominican Republic, to be placed in the Gallery of Heroes of the Pan American Union Building. The bust is the work of the noted Dominican sculptor, Don Abelardo Rodríguez Urdaneta.

BULLETIN
OF THE PAN AMERICAN UNION

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TELEGRAMS EXCHANGED BETWEEN SECRETARY M'ADOO AND SR. RIVA AGÜERO.

The following wireless message was sent by Secretary McAdoo to the minister of foreign affairs at Peru on the evening of April 23:

Please be good enough to convey to the President and to your colleagues of the ministry the expression of my sincere appreciation of the generous courtesies and cordial welcome extended to me so graciously during my short visit to Lima to-day and my keen regret and disappointment that the program for a longer stay could not be carried out. The members of the United States delegation share in this unexpected disappointment. It was a great pleasure and honor to meet the President and the members of his ministry and to see even a little of your wonderfully interesting capital and beautiful country. Your great natural resources make certain the increasing growth and prosperity of your nation. We of the United States, who have been your sincere friends through generations of cordial intercourse, will rejoice always in your prosperity and will be eager always to serve you in the spirit of genuine friendship and reciprocity. The friendship between our countries has rested without variation upon the enduring foundation of mutual admiration, esteem, and respect. May this friendship continue forever and may our countries always stand together in upholding the loftiest standards of liberty, justice, and fraternity, and may they never exercise their great power except for the noblest purposes of humanity.

The following is a copy of the reply received by the Secretary from the minister of foreign affairs:

I have complied with pleasure with the esteemed request your excellency was pleased to make me in your fine message of last night. Both his excellency, the President of the Republic, and my colleagues in the cabinet—whose sentiments I share—beg me to express their thanks for the kind esteem and cordial sentiments manifested by your excellency for Peru, its capital, and its Government.

We only regret that demands of the ship's medical officer, unjustified in our opinion, should have frustrated the carrying out of the sincere courtesies previously concerted with your legation in this city, by means of which my Government, interpreting the national sentiment, desired to give your excellency and the other honorable members of the United States delegation a further proof of the traditional sympathy which Peru maintains for the United States, and which has been the origin of the firm and fruitful friendship, based on great and common political ideals, to which your excellency so aptly referred.

ADDRESS OF PRESIDENT OF THE INTERNATIONAL HIGH COMMISSION ON UNIFORM LEGISLATION AT BUENOS AIRES AND LIST OF DELEGATES IN ATTENDANCE.

Among the many notable speeches made before the International High Commission on Uniform Legislation which met in Buenos

SEÑOR DR. FRANCISCO J. OLIVER,

President of the International High Commission on Uniform Legislation, which met in Buenos Aires. Dr. Oliver was born and educated in Buenos Aires, graduating from the University of Buenos Aires in 1882. Two years afterwards he became a member of its faculty, as teacher of political economy. Later he became professor of finance. In 1904 he was elected to the House of Deputies from the Federal Capital and was vice president of that body in 1906–7. In 1912 he was elected National Deputy from the Province of Buenos Aires, resigning in August, 1915, to accept a position in the Cabinet as Minister of Finance.

Aires during April, the one which sounded the keynote of the conference was the address of Dr. Francisco J. Oliver, minister of finance of the Argentine Republic, in inaugurating the work of the commission. After extending a hearty welcome to his "fellow citizens of America," he briefly outlined the purposes and hopes of those who are lending their efforts toward promoting the solidarity and the protection of the mutual interests of the countries forming the Pan American Union. While it can not be given in full, the following excerpts from his stirring and thoughtful address embody some of its specially notable features:

The solidarity of the Americas is from day to day assuming a more practical and definite shape. The original idealists were followed by Pan American Congresses which brought our nations in touch with each other, in various endeavors to direct their energies toward objects of reciprocal advantage. But the soil was not as yet prepared to receive the new seed. Vexed questions of boundaries kept sister nations apart, communications were extremely difficult, and capital, the magic motor which gives impulse to progress, was insufficient and timid.

The sky has now cleared, and territorial disputes have given way to equitable agreements; all the American nations have accepted the principle of arbitration and have been able to concentrate on the work of their political and economic development the energies which they formerly employed in watching their imaginary enemies. The rapid accumulation of capital is a fact in our countries, and especially in that of our eldest sister, the North American Republic. That is the first nation which, having completed her internal economic evolution, finds herself in a position to send to other countries the creative power of her capital. She has crowned her solid industrial organization with the Federal Reserve Act, which is nothing more than the substitution for the previous anarchy in her credit system, with its wasteful and ill-directed forces, of cooperation and centralized direction in banking operations throughout the country.

* * * * * * *

Whilst in the vast complication of international interests other initiatives and other forces tend to determine and carry out in our America the great conquests which to-day endanger the liberty of the seas and the rights of neutrals, it is incumbent on us to search for some means to overcome the difficulties which present opposition to the elevated purposes of the economic American Union, due to the want of physical means to make it effective, and the peculiar differences in the national or State legislation of our countries.

The creation of a merchant marine is a work that will demand years as well as the employment of enormous capital. But our great American island can no longer remain subject, as it is to-day, to the interruption of its communications, as well as of the transportation of its citizens and products, to the convenience or combinations of other peoples who have no share in its interests or purposes, and if there is anything we must learn from the present situation it is the necessity which it imposes on every American nation to develop as numerous a mercantile marine as its resources will allow, and which, by means of a well-regulated cooperation, will furnish transportation for the products of our industry and for the goods which are required for those and for our ordinary consumption.

The form and conditions of this problem can be determined by each nation; but, fortunately, the products of each country of our wealthy America can be harvested by each country or group of countries at different seasons of the year, and the cooperation between them will be facilitated by that special and advantageous circumstance.

As corollary of this possible solution, we must attend to the development of our resources of fuel, the uniform legislation on commercial documents and customs regulations, and make an effort to agree on a uniform monetary standard with a gold basis. Nor must we overlook other more modest but efficacious means, such as banking facilities, as well as the uniform regulation of commercial travelers.

* * * * * * *

Our policy of Pan American solidarity is happily of easy realization, because there exist between us no questions of subject nationalities or outer dominions, and no territorial ambitions; nor are our democracies prepared to embark on an armed struggle to increase the brilliance of a crown or a dynasty. We have a common origin as well as ideas and aspirations, our political institutions are cast in the admirable mold of Virginia, and there is no need for me to say here that our desires for the political, economic, and cultural advancement of our peoples are based on the same fundamental lines.

It is both natural and just that we should endeavor to take advantage of these felicitous circumstances to further develop the welfare of our people. Nobody can feel alarmed by this policy of American concord and cooperation, as it will redound to the equal benefit of all, whilst this material and moral force which is represented by the Pan American Union will not only be a factor in our economic progress but will also constitute one of the bulwarks for the defense of the rights of American nations.

The delegates to the congress were as follows: Argentina—Dr. Francisco J. Oliver, president; Dr. Ricardo C. Aldao, Dr. Eduardo L. Bidau, Dr. Alfredo Echague, Samuel Hale Pearson, Dr. Manuel M. de Iriondo, Dr. Eleodoro Lobos, Dr. Leopoldo Melo, Dr. Norberto Piñero, Luis E. Zuberbühler; Emilio Hansen, secretary general; and Agustin Muñoz Cabrera, assistant secretary general. Bolivia—Carlos Calvo, José Luis Tejada, Dr. Eliodoro Villazon, and Jorge Saenz. Brazil—Juan Pandia Calogeras, president; Dr. Herculano Marcos Inglez de Souza, Custodio de Almeida Magalhaes, Juan Francisco de Paula é Silva, Raoul Dunlop, secretary, and Dr. Lourival de Guillobel, secretary. Chile—Armanda Quezada A., president; Manuel Salinas, Alberto Edwards, Francisco A. Encina, Luis Izquierdo, Jorge Matte, Guillermo Subercasseaux; Luis Illanes, secretary; and Alfredo Avalos, secretary. Colombia—Guillermo Ancizar Samper. Costa Rica—Juan R. Arias, Manuel Aragon, and Rogelio Fernandez Güell. Cuba—Dr. Juan de Dios Garcia Kohly, president; Benjamin Giberga, and Alvaro Ledon. Dominican Republic—Agustin Henriquez y Carvajal. Ecuador—Agustin Cabezas G., Alberto Bustamante, Rafael Vascones Gomez, and Manuel Bustamante, secretary. Guatemala—Dr. Juan J. Ortega and Dr. Francisco Sanchez Latour. Haiti—Seymour Pradel, president; Fleury Fequiere, and Dr. Edmond Montas, secretary. Honduras—Dr. Mannez G. Zuñiga. Nicaragua—Dr. Pedro Gonzalez and José de la Luz Guerrero. Panama—Dr. Eusebio A. Morales. Paraguay—Dr. Eusebio Ayala, president; Juan B. Gaona, Dr. Gualberto Cardus Huerta, Guillermo de los Rios, Pedro Jorba, Dr. Venancio B. Galeano, Dr. Enrique Bordenave, secretary, and Carlos Jorba, secretary. Peru—Manuel Elias Bonnemaison, José Santiago Rey Basadre, and Carlos Buenaño. Salvador—Dr. Francisco A. Lima, president, and Dr. José Antonio

Quiroz, secretary. United States—William G. McAdoo, president; Duncan U. Fletcher, Andrew J. Peters, Paul M. Warburg, Samuel Untermyer, John H. Fahey, Archibald Kains, Constantine E. McGuire, secretary general; J. Brooks B. Parker, assistant secretary general; Lieut. E. C. S. Parker, Dr. Edgar Thompson; and Dr. G. A. Sherwell, H. N. Branch, Thomas A. Gray, Claud de Baun, and Samuel J. Katsberg, attachés. Uruguay—Pedro Cossio, president; Dr. Luis Piera, vice president; Dr. Gabriel Terra, Dr. Daniel Muñoz, Dr. Julio M. Llamas, Dr. Eduardo Jimenez de Arechaga, Dr. Daniel Blanco Acevedo, Col. Guillermo Lyons, Octavio Morato, Eduardo Vazquez, Tacito Herrera, and Dr. Guillermo Wilson, secretary general. Venezuela—Dr. Carlos F. Grisanti.

THE FINAL ACT OF THE SECOND PAN AMERICAN SCIENTIFIC CONGRESS.

Since the last issue of the BULLETIN there has come from the Government Printing Office and been distributed "The Final Act and Interpretative Commentary Thereon" of the Second Pan American Scientific Congress, which was held in Washington from December 27, 1915, to January 8, 1916. This was prepared by Dr. James Brown Scott of the Carnegie Endowment, who was reporter general of the congress and one of the delegates on the part of the United States. To understand the important character of this important work, there is quoted below the "Foreword" which was prepared by Director General John Barrett of the Pan American Union in his capacity as secretary general of the congress:

The present volume contains the final act of the Second Pan American Scientific Congress, adopted on January 8, 1916, and signed the same day by the official delegates authorized thereto by the 21 American Republics participating in the congress. The final act is therefore official in the highest degree.

This important document, it will be observed, is accompanied by an interpretative commentary or general report discussing the origin and nature of the congress, outlining its methods of procedure, explaining the resolutions and recommendations contained in the final act, and stating the sense in which they were understood and accepted by the congress. The commentary has been prepared by Mr. James Brown Scott, as reporter general, appointed by the executive committee of the United States and the executive committee of the congress to prepare in its name and in its behalf the general report of the scientific labors of the congress.

The volume contains, in addition, the program as finally carried out, the list of scientific institutions, associations, learned societies participating in the congress, and the lists of names of all persons invited to take part in the proceedings. It is believed that the preparation and the publication of the final act and the interpretative commentary at this early date, long before the proceedings, which will fill many volumes, can be issued, will not only make clear the important results reached by the congress but will also sustain the interest in it and its proceedings, which can only be confirmed by the publication of the proceedings in their entirety.

Mr. Scott asks me to thank the chairmen of the nine sections of the congress, the assistant secretary general, Dr. Glen Levin Swiggett, and the recording secretary of the executive committee of the congress, Henry Ralph Ringe, esq., for their invaluable assistance in the preparation of the commentary and of the documents which are contained in the present volume.

PHOTOGRAPH OF DELEGATES TO THE INTERNATIONAL HIGH COMMISSION ON UNIFORM LEGISLATION AT BUENOS AIRES AND THEIR FAMILIES TAKEN WHILE ON A VISIT OF INSPECTION TO THE DEPARTMENT OF IMMIGRATION.

Writing now in his capacity as executive officer of the Pan American Union, and speaking also on behalf of the assistant director and other members of the staff, the director general wishes to compliment Dr. Scott upon the excellence of this commentary, which can not fail to attract the attention and praise of all the delegates to the congress, both those of the United States and of Latin America, and prove of great value as a report to be studied and used as a model for future conferences. Every person who was interested in the broad work of the scientific congress, which was the most successful international conference ever held in Washington and the largest Pan American conference which has assembled in the history of the Western Hemisphere, should not fail to read carefully this commentary and have it at his elbow for reference in all matters relating to the congress. In addition to the commentary, this report contains a number of most valuable appendices, which were prepared largely under the direction of Dr. Glen Levin Swiggett, the assistant secretary general of the congress, who in turn was aided by Mr. Henry Ralph Ringe, recording secretary of the executive committee of the congress. The English edition of this final act will be followed by a Spanish translation which will be largely distributed throughout Latin America.

MEETING OF AMERICAN SOCIETY OF INTERNATIONAL LAW.

The tenth annual meeting of the American Society of International Law, which was held in Washington April 27–29, was one of the most successful, if not the most successful, in its existence. This society was organized 10 years ago and has now achieved a position in the United States which is attracting universal attention. Great credit is due Dr. James Brown Scott of the Carnegie Endowment for what he has done in the development of this organization. The sessions and the final banquet were characterized by remarkably interesting addresses by many of the most prominent authorities upon international law in the United States. Especially notable were speeches by ex-Secretary of State Elihu Root, who is president of the society; Hon. David Jayne Hill, formerly American ambassador to Germany; James W. Garner, professor of political science, University of Illinois; Philip Marshall Brown, professor of international law and diplomacy, Princeton University; Raleigh C. Minor, professor of international law, University of Virginia; Amos S. Hershey, professor of political science and international law, University of Indiana; Francis N. Thorpe, professor of political science and constitutional law, University of Pittsburgh; Hon. George Gray, member of the International Permanent Court of Arbitration; Hon. Robert Lansing, Secretary of State of the United States, and others. In the informal conversations of the members of the society which took

place in the lobbies of the hotel and at dinner parties, there was constant discussion of those phases of international law which have to do with Pan American relations, and there was general recognition of the fact that they will demand increasing attention with the coming years.

A NEW TRAINING SCHOOL IN GUATEMALA CITY.

Young men all over the country will be interested in the foreign-trade training school which Mr. Rober W. Babson, of Wellesley Hills, Mass., proposes to establish in the capital of Guatemala.

Mr. Babson was a member of the Gates party which visited a number of the countries of South America a year or two ago; and more recently he was one of the official delegates to Central America, returning the visits of the Latin Americans in accordance with the provisions of the Financial Congress held in Washington in 1915.

While in Guatemala Mr. Babson became convinced that Guatemala City would be a suitable location for a school where young Americans could go to learn Spanish, and at the same time acquire an intimate knowledge of the customs, manners, and general characteristics of the Latin-American peoples. With this idea in view he acquired property in the Guatemalan capital, and it is proposed to open the school at an early date; the work will start in a modest way and gradually be developed as the plans of the originator are consummated. In the beginning there will be only two teachers; one will be selected from the United States and the other is to be a Guatemalan educator of long training and experience. The method of appointing American students to the new school, the number of scholarships, the exact date of opening, and numerous other details will be announced later.

Guatemala City is about 5,000 feet above sea level, and has a population of 100,000; owing to its altitude the climate is very pleasant, and the city is modernizing in many ways. It has electric street cars, many automobiles, fine parks, good public buildings, and many near-by places of interest for the visitor. A course of several months in the new school should give the young man a fair acquaintance with Latin-American life as well as promote his efficiency in the Spanish language.

A GIFT FROM THE CARNEGIE FOUNDATION FOR INTERNATIONAL PEACE TO THE MUSEO SOCIAL ARGENTINO OF BUENOS AIRES.

A most noteworthy act was that of the Carnegie Foundation for International Peace in bringing together, cataloguing, and forwarding to Buenos Aires as a present to the Museo Social Argentino of a complete library composed entirely of books published in the United States. This library, together with the furniture necessary for its

UNITED STATES DELEGATES AND LADIES ACCOMPANYING THE PARTY TO THE INTERNATIONAL HIGH COMMISSION ON UNIFORM LEGISLATION AT BUENOS AIRES.

This photograph was taken on board the United States cruiser *Tennessee* in the harbor of Buenos Aires. In the front row are Mrs. Samuel Untermyer, Mrs. William G. McAdoo, and Mrs. Andrew J. Peters. Standing, from left to right, are Senator Duncan U. Fletcher, Samuel Untermyer, John H. Fahey, Secretary of the Treasury William G. McAdoo, Assistant Secretary of the Treasury Andrew J. Peters, Archibald Kains, and Paul M. Warburg.

installation, was shipped from New York for Buenos Aires on the *Voltaire*, of the Lamport & Holt Line, on Saturday, May 13. The shipment was in charge of Mr. Peter H. Goldsmith, of the American Association for International Conciliation, who will install and present the library in the name of the Carnegie Foundation to the very enterprising and progressive institution to which it is to be given. The presentation ceremonies will probably take place on July 4.

The library, which consists of between 8,000 and 9,000 works produced in the United States, will be in the metropolis of South America, both a mark of good will and a permanent interpretation of the thought, the sentiment, and the activity of the people of the United States.

There is no sphere of human knowledge which is not found comprehensively in this collection, since not alone has been included all the works of polite literature, but also those treating of history, philosophy, pure and applied science, arts, both liberal and practical, industries in general, constitutional and local law, public and private international law, education, and, in fact, of everything which may reveal the spirit, the tendencies, and the industrial civilization which characterizes the Republic of the United States.

This important gift made by the Carnegie Foundation for International Peace to the museum at Buenos Aires is not exceptional, being in harmony with other proposals under consideration, having as an object the working together in fellowship of this association with similar associations in the sister Republics of this hemisphere, lending to these latter from time to time such cooperation as may be desirable.

THE FIRST PAN AMERICAN AVIATION CONFERENCE

SOME of the world's most famous airmen and flying machines of many varieties recently entertained and instructed thousands of people in Santiago and Valparaiso, Chile. The marvelous performances of the air heroes were heralded by local newspapers, and special trains carried crowds of spectators to the unique maneuvers.

The occasion was the First Pan American Aeronautical Conference, which was held in Santiago in March last. The meeting resulted in bringing together many foremost aviators of the Americas and in giving a renewed impetus to aviation in general. Official delegates from nine different countries were present, including one from the United States; and from the time of arrival to departure

SOUTH AMERICAN AVIATORS.

Aviation in many of the Latin American Republics has received earnest attention, and a number of their flyers have established world's records for altitude, as well as for difficult evolutions. The main picture shows Señor Silvio Pettirossi, a native of Paraguay, giving an exhibition in Buenos Aires. He is shown in the upper insert picture, standing by his monoplane. Señor Pettirossi's exhibition flights at the Panama-Pacific Exposition at San Francisco proved to be a leading attraction. Of the other inserts, the upper is Juan Domenjos, a Chilean, who has also given exhibitions in the United States. The others, from left to right, are Señores Carlos Francisco Borcosque, of Chile; Pedro Zanni, of Argentina; and Alberto Mascias, of Argentina, who were delegates in attendance at the First Pan American Aviation Conference at Santiago, Chile.

the visitors were the recipients of many official and social courtesies. The conference was in session a number of days, and there were many practical flights and tests in which visiting and local flyers participated. Although South America has produced a number of daring and successful aviators, there has never been an international gathering of such importance to future progress of the science south of the Equator.

The following countries were represented by one or more delegates: Argentina, Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru, United States, and Uruguay. Don Jorge Matte, a prominent Chilean, was elected chairman of the conference, which was held under the auspices of the Aero Club of Chile.

During the sessions of the conference the delegates reviewed the progress of aviation in their respective countries and discussed the many obstacles that confront the further advancement and perfection of human flight. The importance of aviation both from a civil and military aspect were duly considered and numerous new ideas were presented. No single delegate perhaps caused more interest or was listened to more attentively than the famous Brazilian airman, Santos Dumont, whose feats in Europe and in North and South America have astonished the world. At the conference Senhor Dumont represented the Aero Club of North America, and his suggestion that Rio de Janeiro be selected as the meeting place for the Second Pan American Aeronautical Conference was unanimously approved. This conference will assemble some time next year, and among other prizes there will be a $10,000 one offered by the Aero Club of North America for certain feats of air flight. Various other large prizes will be offered and the probabilities are that the meeting in Rio de Janeiro will be even more largely attended than the first one in Santiago.

Don Jorge Matte, the retiring president of the Aero Club of Chile, in addressing the delegates at the close of the conference, made an eloquent plea for cooperation of all the countries of the Americas in advancing the science of aviation, emphasizing the work that had already been done by the clubs of the various Republics as a nucleus for greater activities along all possible lines. He declared the first meeting a pronounced success, viewed as a scientific, sportive, or popular enterprise.

Amid the enthusiasm of the sessions of the conference the delegates did not fail to pay homage to the many brave South American aviators who lost their lives in vain attempts to accomplish certain feats; and the visit of delegates to cemeteries to place flowers upon the tombs of Chilean aeronautical heroes was a touching tribute. Other pioneers of neighboring countries were honorably mentioned in the official proceedings.

At the closing sessions of the conference the following officers were elected: President, Señor Jorge Matte Gormaz; secretary general, Don Alberto R. Mascías, of Argentina; first vice president, Mr. Courtlandt F. Bishop, of New York; second vice president, Senhor Marschal Borman, of Brazil; third vice president, Señor Joaquin C. Sanchez, of Uruguay; fourth vice president, Señor Amador F. del Solar, of Peru. Upon the above-named officials will devolve the plans and general arrangements for the next Pan American Aeronautical Conference, which, as above stated, will convene in Rio de Janeiro in 1917.

CENTRAL AMERICA OF TODAY--COSTA RICA[1]

WHEN Columbus on his fourth and last voyage had doubled Cape Gracias a Dios in the early 1500's, and after a stormy and eventful trip sailed along the coasts of what is now Nicaragua and Costa Rica, he landed in the latter country, and from the evidences of wealth which he found there gave it its present name, Costa Rica (rich coast). From that time till the middle of the nineteenth century the history of that country has been very closely interwoven with that of the other Central American Republics. It passed through the period of rule under Spanish leadership, was part of the captain-generalcy of Guatemala, and later formed a section of the vice-royalty of New Spain. With the declaration of independence of Central America in 1821 and the formation of the Central American Republic, Costa Rica became a State of the Union; and later, after the fall of Augustin Iturbide of Mexico, and the dissolution of the Central American Federation, it declared itself an independent nation. This event occurred on April 1, 1829, and on January 21, 1847, it proclaimed a constitution and formally adopted the title of the Republic of Costa Rica.

The recital of these few historical facts is not without purpose, but rather to point out the somewhat stormy political background upon which the country had to build its national life and to emphasize the fact that since its existence as an independent nation it has followed, with but little interruption, a policy of advancement and enlightenment that has worked wonders with its material and social progress. For nearly half a century the country has endeavored quietly and peacefully to solve its peculiar problems, to inculcate the principles of liberty, freedom, and patriotism in its people, and to so inspire confidence that foreign capital might be attracted to its shores and the country reap the benefits of development of its agricultural and commercial resources.

The boast of the country is that its school teachers exceed in number the army, and the Costa Rican points to numerous beautiful school buildings in all parts of the country as the reason for the superior quality of democratic life in this beautiful country. Nor is the boast an idle one, for while there is an army of soldiers and officers numbering about 500, there is an army of school teachers numbering well over 1,000, with nearly 35,000 school children in the

[1] By Harry O. Sandberg, of Pan American Union staff.

SAN JOSE, THE CHARMING CAPITAL OF COSTA RICA.

Situated in the bosom of a broad fertile valley, nearly 4,000 feet above the level of the sea, lies the delightful capital and commercial center of the Republic of Costa Rica. The climate is excellent and the congenial atmosphere of the city, with its well-developed streets and parks, substantial public and private buildings, and good public utilities, make it one of the most comfortable and attractive capitals of Latin America. San Jose is connected by rail with Limon on the Atlantic coast and Puntarenas on the Pacific.

A BUSINESS THOROUGHFARE IN SAN JOSE, COSTA RICA.

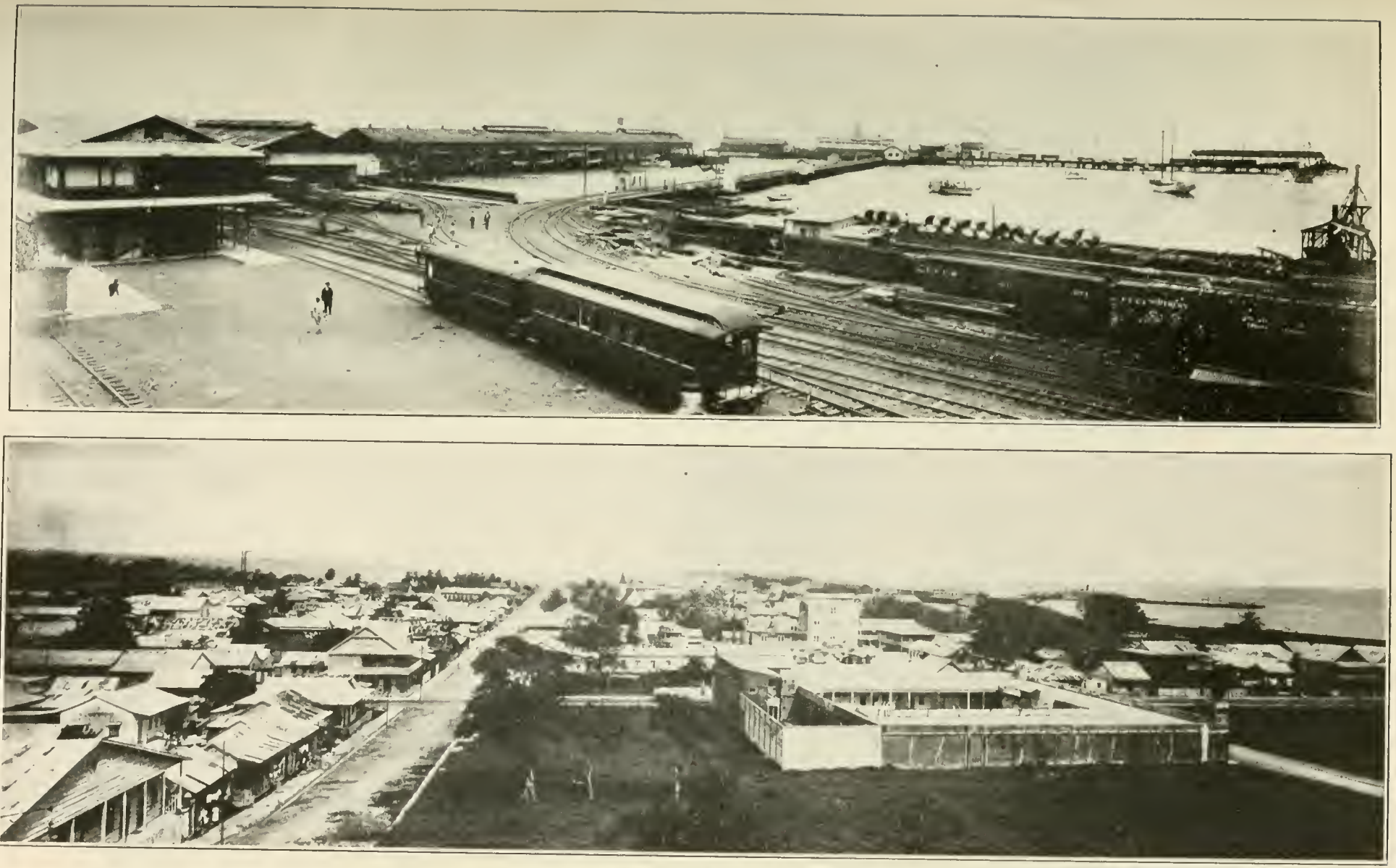
Considering the size and population of the city, the streets present active and busy scenes. The many large stores with their attractive displays of all kinds call forth a considerable shopping class. In the evening, too, there is much strolling about, as the streets are well lighted, and the theaters and refreshment parlors are well patronized by the younger set. One of the interesting contrasts which you see here is that afforded by the trolley cars and automobiles alongside the ancient ox cart, which is now disappearing in the more populous centers.

ranks. Educational training is the means that Costa Rica has adopted since early days for improving its governmental structure, for developing public institutions, for generating a spirit of justice and equality, and that policy has placed it among the progressive little countries of the world. The progress of a nation is said to vary in direct proportion to its educational opportunities, and this truism finds expression in Costa Rica.

It is a bit difficult to restrain yourself from waxing too enthusiastic over this country. The land is so delightfully charming and attractive. Everyone seems to enjoy life. Strange as it may sound, even work seems to be a pleasure. Just what makes things so you can not say. Perhaps it is the climate; more likely, however, it is the people. A fine climate, cordial and congenial people, and a picturesque country, leave little else to be desired. The climate of Costa Rica is next to ideal. In the winter it is mildly pleasant; in the summer it is warm but not hot during the day and comfortably cool at night. And the hospitable, generous, and courteous people! You almost imagine that they are all members of one big family. Everybody seems to know everybody else intimately. Such democracy, too, not alone among the grown-ups but even among the school children whom you see walking and playing in the streets and parks, clad in the neat and simple dresses prescribed by law.

Geographically the country is advantageously situated. It is the southernmost of the Central American group and but a day's sail from Panama. Proximity to the big waterway brings many tourists to its doors. Furthermore, it has a coast line on both the Atlantic and Pacific sides. Excellent steamship service is maintained between Limon, the chief Atlantic port, and numerous points in the United States, Europe, and South America. On the Pacific side Puntarenas is the principal gate of entry, and there is regular communication with Panama and other west coast ports. San Jose, the capital, is connected by rail with both Limon and Puntarenas, thus affording direct railroad communication from coast to coast.

A glance at the economic conditions attests the substantial character of Costa Rica's material progress. Although the country has a population a little in excess of 400,000, it does a foreign commerce of nearly $20,000,000 divided nearly equally between imports and exports. This total is the second greatest of the trade carried on in Central America. Industry is not highly developed and yet there are a surprisingly large number of factories scattered throughout the country producing articles of local need. Among the more important of these are the woodworking establishments, including cabinet and furniture makers. The variety of beautiful woods that abound in the forests supply the material for these industries, and the highly artistic furniture that you find in the homes, offices, and business places speaks well for the degree of efficiency attained in this direction.



SCENES OF PORT LIMON COSTA RICA.

This is the principal eastern port of the country and is splendidly equipped with docks and wharves. There are also ample facilities for loading the frequent cargoes of bananas and the large shipments of coffee. Considerable business activity has developed at the port, and the lively nature of the town draws to it the laborers from the neighboring plantations. Limon is but an overnight sail from Panama, and many tourists to the Canal include a visit to this country in their itinerary.

Photograph by Underwood & Underwood.

A PLANTATION IN THE GREAT BANANA COUNTRY OF THE WESTERN HEMISPHERE.

The picture shows a large banana plantation near Puerto Limon, in the banana zone of Costa Rica. The houses in the middle background are dwellings of superintendent and laborers. Banana cultivation is the great industry of the country and its development in Costa Rica represents one of the greatest enterprises in the world. Over 11,000,000 bunches are annually exported at a value of about $5,000,000.

ON A COSTA RICAN COFFEE PLANTATION.

Next in importance to the banana industry is coffee growing. The local fruit has an especially delicious flavor and is one of the best quality beans produced. Nearly three-fourths of the annual production goes to England, but there is an increasing amount of it being imported into the United States The yearly output approximates 40,000,000 pounds and its export represents a value of about $3,500,000.

It is, however, the agricultural development of the land upon which the wealth of the nation depends, for you must remember that bananas and coffee are the two great factors in the export trade. The coffee is of a superior quality and commands excellent prices abroad, especially in Great Britain, where nearly 75 per cent of the annual yield goes and where it is used for blending and flavoring purposes. The United States, however, is beginning to appreciate the value of the Costa Rican bean and is importing more and more yearly. The annual crop is estimated at about 40,000,000 pounds and has an export value of over $3,500,000.

But the banana, the fruit that forms such an important item in the commerce of most of the countries bordering on the Carribean, represents the great single industry here. Costa Rica is the great banana country of the Western Hemisphere. It produces more bunches of the fruit of the *Musa Sapientium* than any other single country on the American Continent. It exports from 10,000,000 to 12,000,000 bunches, valued at over $5,250,000. Nearly 390 square miles of land are included in the banana zone, and though not all this huge tract is under cultivation, some of it being in fact unfitted for such purpose, yet there is every hope that most of it will some day be utilized for this and even new tropical products which are bidding for northern favor.

During the past few years there seems to be a falling off in the yield of the banana due partly to a disease whose origin and elimination are yet unsolved problems, although the subject of much scientific study and investigation. Nevertheless, new plantations are being made at various points in the fruit districts, while much of the abandoned lands are being planted in cacao. This latter product is thriving splendidly and perhaps the disease may prove a blessing in disguise, for it may have a tendency to encourage a greater diversity of agricultural products and in turn lead to a broader agricultural development. For with the growing importance of Panama and the Canal Zone as an entrepôt for the shipping of the world and the supply stores constantly increasing in their demands, Costa Rica, by reason of its proximity, its territorial area, variety of climate and fertility of soil, could enjoy a big profitable market right at her doors. Nor are the Costa Ricans oblivious to this opportunity. During the writer's visit to the country he found that much thought and consideration were being given to this question, and His Excellency, President Alfredo Gonzalez, with characteristic energy, enthusiasm, and foresight, seemed especially anxious that his country make the most of this opportunity.

In this connection, the cattle industry may also be considered. There are extensive areas of suitable pasture lands, and though some cattle are imported for fattening and breeding purposes, the few

CHURCHES IN COSTA RICA.

Every village and town has its church and the majority of them are more or less alike in design. The upper picture is that of the church at Desamparados, built of wood and quite characteristic. The lower picture is that of the church at Puntarenas, and is unique in style and construction. It is built of stone and the style is suggestive of the old English parish church. While it is altogether an attractive building, yet it stands out in striking contrast to the other buildings of that town.

THE CATHEDRAL AT SAN JOSE, COSTA RICA.

A large solid structure facing one side of the central park. Though in reality it is not very tall, yet the dignity and elegance of its architecture give it a rather imposing appearance. Pretty gardens front the portals and on one side is the palace of the bishop.

COLLECTION OF ANTIQUITIES IN THE BISHOP'S PALACE AT SAN JOSE.

One of the most remarkable private collections of antiquities is found in the bishop's palace. It has over 20,000 articles, representing strange, artistic, and curious pieces of handicraft of Indians from the various parts of the country. These relics are made of clays, potteries, stones, and even gold and silver, and include some very rare and precious specimens. In the palace there are also portraits of all the Presidents of the country, as well as of the various bishops who have served in that diocese. A library of 15,000 volumes and a good-sized collection of stuffed birds from Costa Rican forests are among the other things of interest.

shipments that have already been made to Panama foreshadow the possibility of another potential economic factor.

After you have thus cursorily examined the general conditions, political, social, and economic, you understand why there is such contentment and that estates are pretty well divided up among the people; also the reason for the growth of an industrious middle class, and why throughout the country the people appear so happy and independent, thinking out their own problems, freely exercising the right of franchise, and striving for the highest achievement in national life.

If you happen to enter the country via Puntarenas, as the writer did, you will be pleased to find a pretty beach of white sand with the long billowy waves gently breaking on the shore. The town itself is small and clean, with well-laid-out streets and walks. There is an unusually attractive park, and the two clubhouses are situated near enough to the beach so that you may restfully enjoy the ocean breezes while reading the latest papers and magazines from foreign countries. The stores here are well stocked and many of them are branches of larger establishments located at the capital. You will also find a number of public buildings, all of them clean, sanitary, and inviting—the barracks, the governor's offices, the several schoolhouses—and not the least interesting is a church, standing a distance back of a green swarth, but of a style of architecture strangely suggestive of the old English parish church rather than the characteristic Latin American *iglesia*.

From Puntarenas you take the transcontinental railway to the capital, a distance of 69 miles. Characteristic tropic scenery picturesque in the extreme affords you every delight. Plateaus, hills, volcanoes, rolling plains, a variety of formations, now presenting a vista of brilliant green, here under the spell of luxuriant vegetation deepening into darker shades with tinges of blue and purple; wild flowers of bright hues add to the color scheme and in the enjoyment of these natural wonders you overlook the time it takes to make the climb of nearly 4,000 feet to where San Jose peacefully lies in a green valley; but you can not fail to overlook the fact that you are traveling in comfortable coaches with plush seats and revolving parlor-car chairs.

At last the train will pull into a well-built station, and as you pass out into the street several electric trolley cars will be in waiting to handle the incoming crowds. For a moment you doubt that you are traveling in the Tropics. In the street car you scan your fellow passengers and notice how well dressed the men are and how considerate they appear to be of each other's comfort, making room for a passenger who has just entered or rising to give up a seat to some lady; but somehow you find yourself, almost unconsciously, taking more than passing notice of the ladies, for the beauty, grace, and charm of

SECTION OF FRONT FAÇADE OF THE SAN JUAN DE DIOS HOSPITAL, SAN JOSE.

The hospital is one of the oldest and best equipped institutions in Central America. Founded in 1799 by Bishop Tristan, it was reorganized in 1852, and 25 years later the corner stone of the present building was laid. The work of the hospital is carried on under the supervision of the Sisters of Charity and is sustained by public benefactions. On the staff are noted physicians and surgeons.

A PHYSICIAN'S RESIDENCE IN CHAPUI ASYLUM, SAN JOSE.

The Chapui Asylum (Asilo Chapui) is undoubtedly one of the model insane asylums on the American Continent. The wards are located in the center of a beautiful park and their arrangement is in accordance with the most advanced theories on the treatment of the demented. The asylum was inaugurated in 1890 and was five years in construction. The house shown in the illustration is a type of the single wooden frame buildings that are becoming so popular in the country.

THE FOYER OF THE NATIONAL THEATER IN COSTA RICA'S CAPITAL.

Exquisite furnishings and gorgeous decorations combine to make the theater one of the most pretentious in America. Mural decorations, the work of master artists from Spain, Italy, and Austria-Hungary, richly brocaded furniture with gold embellishments, a parquetry floor of rare quality, and gilded and mirrored panels all unite in perfect splendor and harmony. And this same elaborate scheme is carried out in the other parts of the theater. The ceiling of the theater and the drop curtain contain wonderful paintings. There are special lounging rooms for men and rest rooms for the ladies, each well appointed and highly decorated. The theater is said to cost over a million dollars and is a monumental expression of Costa Rica's love for the beautiful.

the Costa Rican lady are proverbial. On the panels of the car you find a variety of advertisements, in Spanish, made attractive by bright and breezy expressions and artistic illustrations. Newspapers, magazines, and electric and steam cars are extensively used for advertising purposes in Costa Rica.

As your car passes the business section you marvel at the number and size of the shops. Such large attractive stores, of the department variety as well as of the specialized class. And all of them so well stocked and such pretty things! You notice one shop displaying in a most attractive manner a wide variety of electric appliances for home use—instantaneous heaters, toasters, flat irons, and a dozen and more things; other shops are presenting the very latest styles from Paris, Berlin, London, and New York. Automobiles and motor cycles you find in goodly number; Costa Rica needs everything and its people enjoy both comfort and luxury. No wonder they are so well dressed; no wonder they take such pride in the artistic appearance of their homes, their public buildings, and their country.

San Jose, the capital, has been described time and again. It is a charming little city of about 50,000 inhabitants. Everyone takes a personal pride in the city and in its show spots. Pretty parks and monuments and a wonderful band afford entertainment and pleasure almost nightly. The women have their charity clubs and social circles; the men their political and fraternal organizations. Frequent meetings and social events bring them together into closer association than is usually customary in other Latin American countries. There seems to be a broader, freer, and more democratic intermingling of the peoples and sexes, the result of broadening influences and enlightened tendencies. Art and music are highly developed, and the Government is ready to aid with scholarships young men or women possessing exceptional talent in these cultural fields. In the lobby of the National Theater is a beautiful marble statue, the work of a Costa Rican who studied abroad, aided by the Government. The art school and the school of music have always their full quota of students.

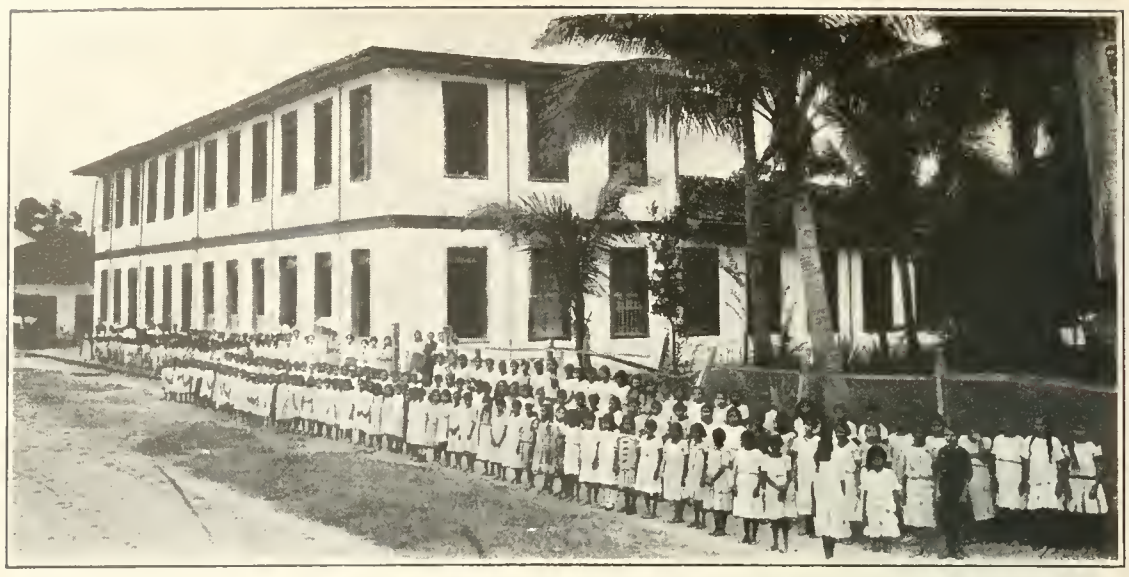
Perhaps the most notable of the public buildings is the National Theater, modest and unpretentious from without, but almost regal in its interior elegance. It is indeed a monument to the artistic sense of Costa Rica, and is easily one of the most beautiful buildings in all America. You stand in almost silent admiration as you gaze upon the splendor of its appointments and furnishings, and the beauty of its mural decorations. The presidential palace, too, situated on a high terrace, represents the type of residence that is now being erected throughout the city. Detached homes of wood and concrete, similar to those you might expect to see in the residential sections of a North American city, are replacing those of the older type. The public library, the museum of natural history, the hospital of San

THE NATIONAL LIBRARY AT SAN JOSE.

The library forms an important element in the educational life of the Republic, and nearly every city has a public library. The building at the capital contains over 30,000 volumes, catalogued and arranged in a scientific manner. There are considerable numbers of foreign books.

SCHOOL EXERCISES AT SAN JOSE, COSTA RICA.

Elementary education is free and compulsory, but from the number of school buildings and the large enrollment of school children it would seem that no compulsion is necessary for the young to take advantage of the educational opportunities. The country long ago applied itself energetically and systematically to problems of popular education, realizing that the richest possession of a State is an intelligent citizenship, and the Costa Ricans have responded to the ideal.



SCHOOLS OF COSTA RICA.

Upper: School children in front of the building at Liberia. Center: Government palace (in foreground) and school building at Desamparados. Lower: School children at Puntarenas. The Government exercises great care in the preparation and selection of teachers.

THE LICEO OF COSTA RICA AT SAN JOSE.

This institution may be compared to the high school, and there is a corresponding school for young ladies known as the "colegio." At the end of the regular three-year course common to all pupils comes the division into the literary, commercial, and normal sections. Under the able direction of Dr. Juan Davila, of the Liceo, and Dr. Fidel Tristan, of the Colegio, these institutions are doing a splendid work not only along educational lines but in developing healthy mind and body in the student. Physical and character training, through the introduction of sports and contests, are bringing about a wholesome school spirit.

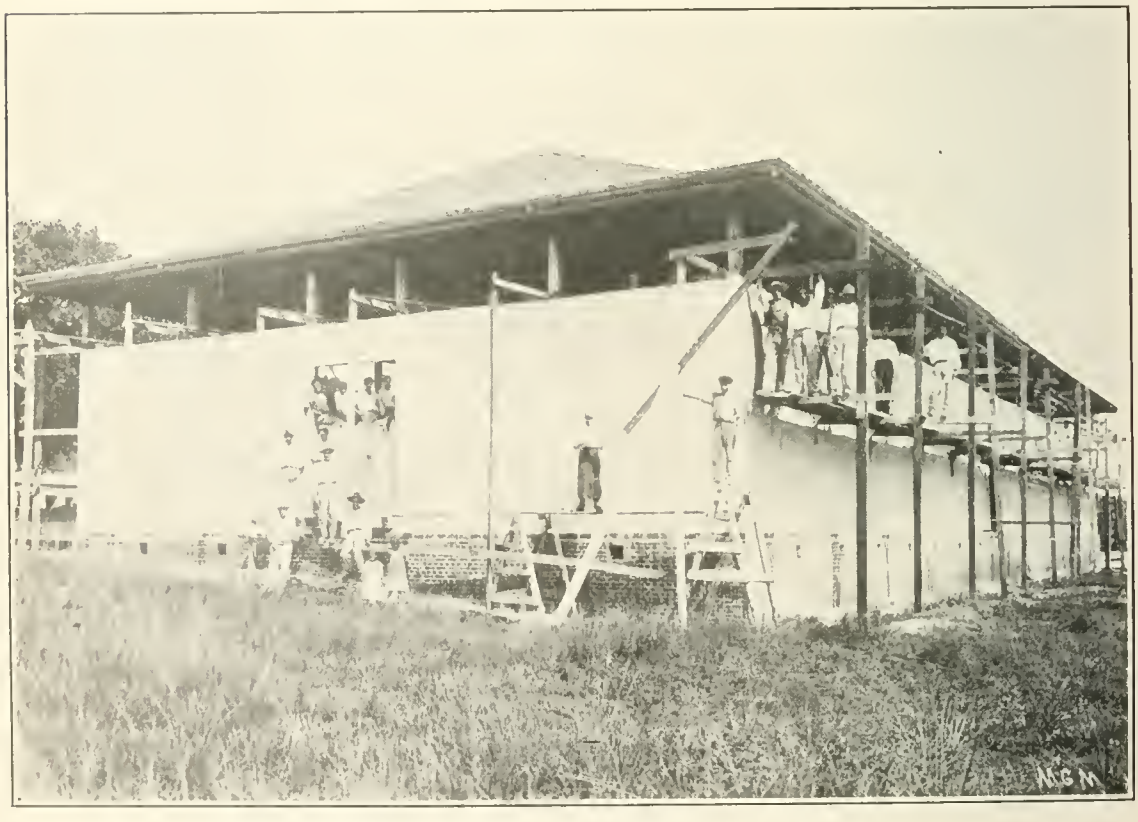
José de Dios, and the Asilo Chapui are creditable public institutions. The cathedral occupies a prominent position on one side of the main park, and if you are fortunate enough to receive an invitation to the palace from the genial bishop you will there see a splendid collection of Indian curios and antiquities, over 20,000 specimens made of rock, pottery, metal, and even gold and precious stones. You will also enjoy a visit to the Central American Court of Justice and there draw inspiration from a tribunal which is unique in the world's galaxy of judicial bodies, an eloquent example of how friendly neighboring countries may compose differences that arise between them or their citizens through peaceful and enlightened methods.

And then the schools and schoolhouses. From the primary grades to the "liceo" for young men and the "colegio," for young ladies, the buildings they occupy and the equipment they possess would be a credit to cities many times larger and many times richer than this capital. The teachers are usually graduates of local normal schools and the product of a systematic training along advanced pedagogic lines. In the high schools such as the "liceo," and the "colegio" the standards would compare most favorably with the high schools of the United States. The masters and the teachers are men and women of strong personality and broad training. The curricula and the character of work are of equally high grade, and the Government spares no pains nor efforts in constantly improving the schools and their facilities. The range of studies include college and scientific courses, commercial studies, manual training, and domestic science. The splendid equipment of the model kitchens and other rooms in the domestic science classes, and the complete and up-to-date apparatuses of the other departments and laboratories reflect great credit upon the department of education. The institutions, moreover, are developing class and school spirit among the students, and athletics are being introduced as part of the school work.

Perhaps one of the most interesting of the educational institutions is the Normal School at Heredia, just a few miles out of San José. This institution is the pride of Central America, and an effort is being made to provide a limited number of scholarships for students from each of the other Central American countries. The school has a large building, and an annex almost as large is now being added to it. The principal, at the time of the writer's visit in the country, was a young Costa Rican who graduated from Columbia University two years ago. Returning to his native country he was appointed head of that school with authority to reorganize its curriculum. To use his own words, he proceeded to Heredia "with an equipment of six boxes of chalk, six erasers, an abundance of enthusiasm and energy, and a determination to make this one of the greatest schools of its kind." And he has pretty well accomplished what he had in mind,

THE NORMAL SCHOOL AT HEREDIA, COSTA RICA.

In the faculty are some of the best scholars of that country, notably the Director, Dr. Roberto Brenes Mesen, one time Minister in Washington. Several North American teachers are also in charge of studies, and the school ranks as one of the most progressive institutions in the country.



THE NORMAL SCHOOL AT HEREDIA, COSTA RICA.

Upper: Interior corridors showing the open form of structure. The building contains well-equipped classrooms, halls, and laboratories, and together with the liceo and colegio at the capital present a fair sample of the excellent standards of public instruction in Costa Rica. Lower: The gymnasium of the Normal School. Basket ball, tennis, baseball, and other sports are played by the students and spirited contests between classes and other schools serve to bring about a national school spirit.

Assisted by a splendid faculty and given every encouragement by the Government, he has developed a model school with a wonderful esprit de corps among students and faculty. Among the teachers are included some of Costa Rica's most scholarly men, and several young men and women from the United States whom the principal knew while at college. At the present time Dr. Roberto Brenes Mesen, former minister to the United States, and one of Costa Rica's great scholars and writers, is director. Alongside the school building a gymnasium is being constructed with basket-ball facilities, a cinder path for track work, tennis courts, and even a baseball diamond. And one other factor, too, you will notice in connection with the school system, not only in Heredia, but throughout the country, and that is the cooperation between the school and the home. Parents and school authorities are coming into closer contact and the problems of sanitation and hygiene, as well as of education, are receiving a broader consideration.

Such then is the character of the country which is so pleasantly remembered by all those who visit it. Writers have applied a variety of titles to it. It has been called the Switzerland of America, and even "Little Paradise," but whichever you select you will not go far astray, for a trip through happy and cheerful Costa Rica will afford you the pleasure and delights that you might experience in the places after which it is oftentimes designated.

YERBA MATE—THE TEA OF SOUTH AMERICA

MAN, primitive or cultured, seems to be so constituted that he needs, or imagines he needs, periodically or regularly and habitually administered, some kind of a stimulant or narcotic—and he generally manages to get it. That, too, whether he lives in the wilds of Africa, in the heart of India, on the banks of the Euphrates, or in the crowded capitals of Europe and the Americas. An African tribe may be so low in the scale of human intelligence that its members can count no farther than 3, but some of them will have found a way to prepare from some vegetable substance an alcoholic liquor that will exhilarate, excite, and generally intoxicate, even as their paler brothers of the highest intellect and culture have discovered how to make champagne and various other liquid refreshments that cheer and also inebriate.

[1] By Edward Albes, of Pan American Union staff.

Photo by Harris-Ewing.

THE ILEX PARAGUAYENSIS.

The maté plant pictured above, indicated by the white cross, is thriving in the patio of the Pan American Union Building at Washington. Its native habitat is to be found in the southern States of Brazil, in Paraguay, and in the northern part of Argentina. It is from the dried and powdered leaves of this plant, which grows to a height of from 12 to 26 feet as a tree, that Paraguayan tea is made.

GATHERING YERBA MATÉ.

Left: Leaves of the *Ilex paraguayensis*—the yerba maté tree. Center: The native gatherer, variously called *yerbatero, tarifero,* or *minero,* at work with his machete hacking off the smaller branches and leaves of the tree. Right: Carrying the cut branches and leaves, by means of the *alza,* or strip of hide, which is passed around the forehead, the ends being tied to the bundle whose weight is distributed on the shoulders and back.

The stimulant, or narcotic, may not always be in the form of a liquid, for sometimes it is smoked, as is the opium of the Chinese, or that most cherished of all weeds, tobacco; and again it may be eaten, as is that sweetened preparation of hemp leaves, known as *bhang*, in its Turkish form called *hashish*. Whatever the name or form or method devised for taking it into the human system, the effects produced are more or less alike; and the worst feature of all these intoxicating inventions of man is that they are habit-forming in their effects and invariably lead to intemperance in their use. Fortunately, however, there are a few products of nature that, when properly prepared, will largely satisfy this craving for exhilaration or stimulation without inducing intoxication and without the injurious effects attendant upon the use of the more powerful drinks and drugs above alluded to.

Among the various harmless stimulants whose effects are really beneficial there are two beverages which are of strictly American origin, the plants which produce them being indigenous to the Americas, and the drink prepared from them having been invented and concocted by the aborigines long before the Columbian discovery. One of these, a well-known food and drink as well as mild stimulant, has been dealt with heretofore in an article on Theobroma Cacao—or chocolate. The other is not so well known throughout the world, although it is the favorite beverage of perhaps 15,000,000 people in South America; it is called *yerba mate* in the Spanish-speaking countries, *herva matte* in Brazil, and Paraguayan tea elsewhere in the world.

The term *yerba mate*, since it is used to denote the plant as well as the drink, may need some little explanation in order to avoid a confusion of terms in the following sketch. The Guarani Indians, who first made known the plant and the use of its leaves to the Spaniards in Paraguay and to the Portuguese in southern Brazil, call it *caa*—the plant—that is the plant that is unique among all others, *the* plant of all plants, so to speak. *Caa guazu*, the more specific term, meant the "big" or "splendid plant." The Spaniards, translating literally, called it *yerba*—the herb. The *mate*—Spanish for gourd—came to be used in connection with *herba* because it was in a dried gourd that the pulverized leaves were steeped in boiling water to prepare the drink. By habit the container began to imply the contents and *yerba*, the herb, and *mate*, the gourd, combined meant the gourd-herb, and became the name of the plant and then of the drink made therefrom.

The plant, known botanically as *Ilex Paraguayensis*, is the South American holly, and is indigenous to a large scope of country embracing the four Brazilian States of Paraná, Santa Catharina, Rio Grande do Sul, and Matto Grosso; the northern section of Argentina; and

CARRYING THE PRODUCT TO THE CAMP.

The branches and leaves are gathered in great piles and at the end of the day's work are carried in the manner shown above to the camp to undergo the curing process outlined in the text.

the eastern and central portions of Paraguay. It is an evergreen tree or shrub which grows from 12 to 26 feet in height, very bushy and beautiful and from a distance looking much like an orange tree. The leaves are a glossy green, the flowers small and yellowish in color, and the little berries a purplish black. Some varieties, especially those having a small leaf of dark green shade, are preferred because they are said to make the finest quality of tea. The fruit is attached to the branches by a short stalk and contains a soft pulp in which are imbedded four little hard seeds.

These seeds, when left exposed for a few days, get so dry and hard that it takes a sharp knife to cut them. As a result, all efforts to propagate the plants from seeds failed for many years, as they invariably refused to germinate. The Jesuit fathers in southern Brazil, however, were a very observant and thoughtful class of men. They found that the plant in its native forests was propagated chiefly from seeds that had passed through the digestive tract of birds that had eaten the berries, the intestinal juices having first softened the hard shell of the seed, so that when deposited on the ground the strength of the embryo within was sufficient to burst its covering and germination was made easy. The shrewd fathers forthwith devised a method of chemically treating the seeds to accomplish the same result artificially, and thus successfully started the first yerba mate plantations. The method of preparing the seeds was not divulged by the Jesuits, however, and when they were later expelled from Brazil the industry of cultivating herva in plantations was entirely abandoned. In recent years, however, new experiments have met with success, and there are now a number of flourishing plantations in Parana, Brazil, as well as in Paraguay.

Starting a *yerba mate* plantation is not so simple and easy a matter as might be supposed. The young plant is rather tender and sensitive, and needs in its early stages abundant shade. The seed is therefore usually sown in forest land, where the surrounding vegetation furnishes the needed protection until the plant has developed s ufficiently to withstand the heat of the direct rays of the sun. The surrounding shrubs and trees are then cleared away and the well-started plant begins to thrive. One result of cultivating the mate tree is that when given unrestricted sunshine and open air it spreads out its branches and becomes bushy, thus producing more and better leaves than does the wild tree, which is often hampered by its environment, and while drawn upward to greater heights in order to reach the light and air it needs, has a much smaller spread and fewer branches and leaves. Some cultivators have adopted the method of sowing the seeds of the rapidly growing castor-oil plant in close proximity to the yerba mate seedlings, the former much more quickly

Courtesy of Señor Alfonso Guerdile, Buneos Aires.

THE PRIMITIVE METHOD OF PULVERIZING THE LEAVES.

The old method of pulverizing the leaves was to spread them out on a spot of smooth and hard ground and subject them to a flailing process, much like that administered to grain by an old-fashioned flail. Now, however, the leaves are pounded into small particles and ground to powder by means of a rudely constructed mill, temporarily erected at the camp, or they are sent to mills in the towns for their final preparation by modern machinery.

developed plant furnishing the required shade for as long as it is needed.

Another characteristic of the yerba tree is that of its adaptability to its environment, such as accommodating itself to different soils and varying degrees of moisture. The wild species is usually found along the low shores of rivers, where it has a superabundance of moisture; but it has been found that the cultivated varieties will flourish about as well on higher ground having natural or artificial drainage, and need no artificial watering. The zone of cultivation, therefore, may be greatly extended, and eventually reach far beyond the tree's present natural habitat. In the future, as the world's demand for yerba mate increases, the plantation product will doubtless replace that of the native forests, for the cultivated groves once established, the crop is more easily gathered and with far less expense. In the meantime, the old method of gathering, drying, and powdering the leaves of the forest product still prevails in most of the sections which now supply the world's demand, and may be outlined as follows:

The native gatherers usually go into the forests in small companies or groups under the leadership of a manager or overseer, who is generally an expert in the work of gathering and preparing the yerba leaves and at the same time knows how to manage his men to advantage. Having selected a place where the trees are plentiful and within easy walking distance, a camp is made. The leaves must be gathered at their early maturity and when the weather is dry, so the time for the work is usually about the beginning of May. Temporary quarters are first erected, consisting of sheds covered with the broad leaves of palms or of banana trees.

While some of the men are engaged in this work another squad is busily engaged in constructing what is known as the *tatacua*. This is a small plot of ground, about 6 feet square, which is beaten down and pounded with heavy wooden mallets until its surface becomes firm and hard. At the four corners are driven large stakes, while upon the smoothed surface are piled logs of wood, which later serve for fuel. It is at this place that the leaves and small twigs are collected and placed in huge piles by the gatherers for their first scorching, the fired logs furnishing the required heat. After this first scorching the leaves are stripped from the smallest branches and twigs, and, being collected in large square nets made of strips of hide, are taken to another place called the *barbacua*.

The *barbacua* consists of a large arch supported on three trestles, the center trestle being the highest. The roof of the arch consists of a superstructure of crosspieces nailed to stakes on either side of the central supports. The leaves are then spread out on this roof and a hot fire kindled underneath. Several of the workers are stationed about the structure, armed with long poles, to prevent

Courtesy of Señor Alfonso Guerdile, Buenos Aires.

A BARBACUA FOR PREPARING YERBA.

The first consideration in the treatment of the maté is to effect its cure, as it may be called, by scorching immediately after the branches and leaves are collected. It is then taken to the *barbacuá* for final curing.

MATÉ GATHERING, AT A FOREST DEPOT, PARANA.

The mode of living and the habits of the yerbateros differ only slightly in all parts where the maté grows These huts and hide sacks of the prepared tea are seen in Brazil as well as in Paraguay.

ignition of the leaves. When the leaves have become thoroughly cured and dried, a process which consumes about 24 hours, the fire underneath is extinguished and the ground carefully swept and cleaned and then pounded with the great mallets until the surface is smooth and almost as hard as stone. The cured leaves are then thrown down from the roof, and by means of a rudely constructed mill are pulverized.

The *tatacua* and *barbacua* having been prepared, the gathering squads proceed to the places where the yerba trees are found in greatest profusion. They grow irregularly, sometimes only a few to an acre and occasionally in large clumps from which a bounteous harvest is easily procured. About the only implements with which each gatherer is supplied are a machete or a small ax, a kind of leather hopple called *manea*, which, when tied to both ankles, serves as an aid to climbing the trees, and a wide strap or strip of hide, called *alza*, which is passed around the forehead, the ends being tied to the great bundles of branches and leaves, to be carried on the shoulders and back. This method of portage, distributing the weight carried between the shoulders and on the back, leaving the hands and arms free, seems to be a favorite one among the natives of many of the countries of South America.

In gathering the leaves the *yerbatero*, or gatherer, climbs the tree and hacks off all the smaller leaf-bearing branches, leaving the tree practically denuded. Left undisturbed for about three years, the tree develops new branches and leaves, and another supply is ready for a new harvest. The branches and leaves are gathered in huge piles, and at the end of the day's work are carried in the manner outlined above to the camp to undergo the curing and pulverizing process.

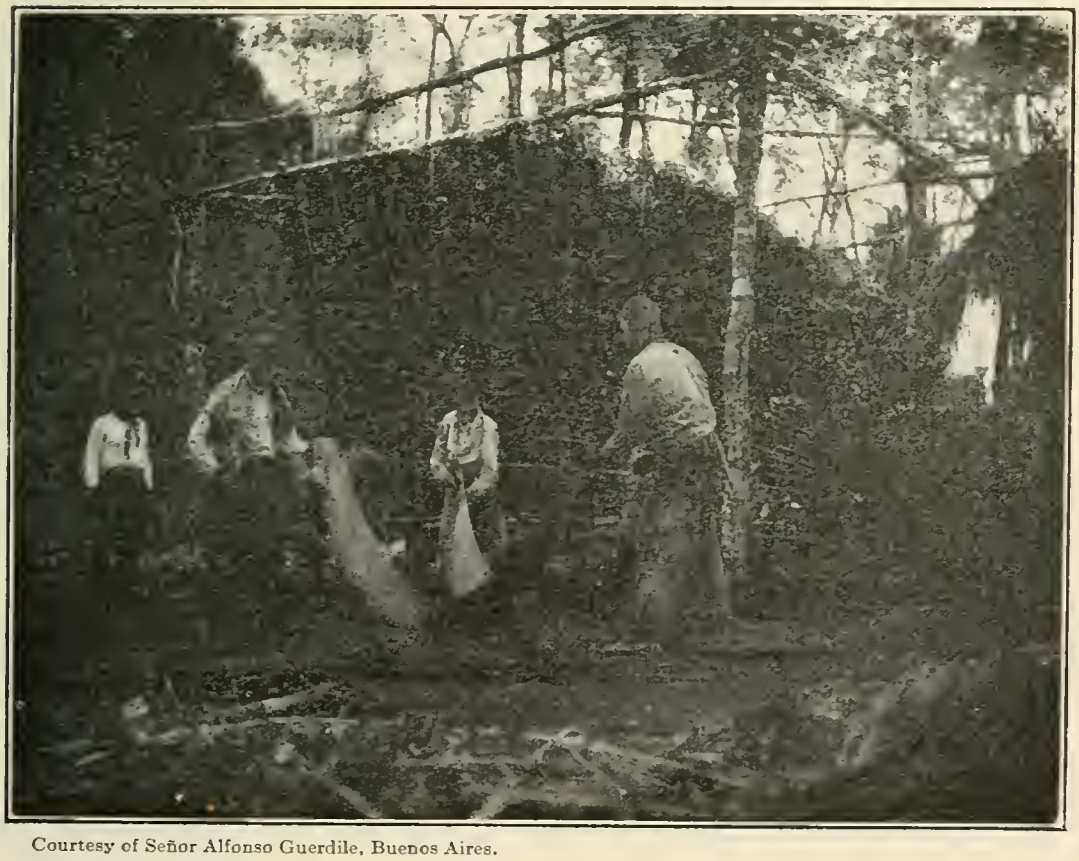
After the leaves have been pulverized the next step is that of packing the product for shipment. The native method is packing the powdered yerba into hide sacks. The half of a raw oxhide is sewed together in the form of a square sack, one side or end being left open. Two of the corners are then strongly tied to two strong stakes driven deep into the ground, and the pulverized product is packed and pounded down into the sack by means of a large pestle made of a stout staff, with a heavy wooden block at the end. When filled to its utmost capacity, the sack is sewed up, and after it is exposed to the sun for a day or two the hide dries out and the bundle becomes as dense and hard almost as stone. The filled sacks weigh from 200 to 220 pounds each, and in this state are ready for shipment and export. They are transported on mule back or by means of oxcarts to the distributing centers and seaports.

The methods outlined above are those which have obtained in Paraguay and southern Brazil for centuries. In recent years, how-

From an old engraving in a book of travels over Paraguay, published in England, 1839.

PROCESS OF PREPARING THE YERBA.

The leaves and small twigs are first smoked and even scorched in a place where they are exposed to a fire smoldering beneath them. This is called a *tatacua*.



Courtesy of Señor Alfonso Guerdile, Buenos Aires.

A BARBACUA AND THE YERBATEROS.

After the first process of scorching the twigs and leaves at the *tatacua* is completed, they are gathered and taken to the next curing place, the *barbacuá*, where the curing process is completed, as outlined in the text.

ever, more modern and improved methods of curing, pulverizing, and packing the product have been introduced, and the number of *maté* mills is constantly increasing. In the State of Paraná, Brazil, there are now something over 30 improved *maté* mills, called *engenhos*, half of them being in Curityba, the capital of the State, whence large quantities are annually exported to Argentina, Uruguay, Chile, Bolivia, and some even to European countries. The value of the *maté* exported by the Brazilian States of Paraná, Santa Catharina, and Rio Grande do Sul amounts annually to about $8,727,000. In 1915 the imports of Argentina of yerba mate from Brazil amounted to about 48,000 tons and from Paraguay about 3,500 tons.

As to *yerba maté*, the beverage, it may be well, in order to avoid confusion with the plant, to call it Paraguayan tea. As intimated above, it was the favorite beverage and stimulant of the Guarani Indians for many years before the Spanish conquest of Paraguay and the Portuguese settlement of Brazil. They taught the use of it to the Jesuit fathers, who soon recognized its virtues and made the collection and preparation of the product an important industry, establishing quite a number of large and flourishing plantations, which became the centers for their great missionary work among the natives.

The Indians prepared the drink by placing a small quantity of the powdered leaves in a receptacle, usually a clean, dried gourd from which the stem had been cut—thus leaving a round aperture at the top—and then pouring in very hot or boiling water. After being allowed to steep for a few minutes, a little lemon juice or perhaps some sweet substance was added and the decoction was ready for consumption. Since the small particles of the leaves would not settle to the bottom, it had been found necessary to invent a tube having some kind of strainer at the end through which the liquid might be sucked from the receptacle. A short piece of cane, or perhaps the upper bone of the wing of a large bird, with one end covered with a bulb of closely woven fiber served the purpose for the natives. This implement was given the name of *bombilla*—little pump—by the Spaniards, who later improved it by making it of metal, the tube having a perforated, spoon-shaped end that served to stir as well as to strain the liquid.

Among the Indians it was the custom and for that matter is yet, when the stranger entered their camp or communal hut, to forthwith prepare a gourd of *yerba maté*. The beverage being ready for consumption, the chief or head man would take a sip through the *bombilla* and then pass the receptacle to the visitor, who was expected to partake thereof in the same manner and through the same tube. It was then passed on from one to another until all present had partaken, when it was started on another round, and so on until

Courtesy of Señor Alfonso Guerdile, Buenos Aires.

A FOREST CAMP OF YERBA GATHERERS.

Here those employed in collecting the plants and in preparing the leaves for market make their home for the time being. Near them are the barbacuá, and the ñoque (storehouse of yerba). The capataz is the head man who has charge of the entire work; the escribiente is the bookkeeper; the secador is the technician upon whose judgment depends the delicate operation of drying and scorching the leaves, to bring out the best that is in them. (1) Food storehouse; (2) working material; (3) yerba depository.

Courtesy of Señor Alfonso Guerdile, Buenos Aires.

WAREHOUSES FOR THE YERBA.

Here is stored the accumulated stock of maté, held in readiness for shipment. Women's quarters also are provided, and accommodation for the mule teams is ready. Numbers of such buildings are found on the banks of the Parana River, where much of the yerba is collected for the consuming markets, Buenos Aires being the largest.

YERBA MATÉ READY FOR TRANSPORT.

THE MATÉ AND THE BOMBILLA.

The maté is the usual name for the hollowed gourd from which the yerba maté (Paraguayan tea) is drunk. Colloquially, the word cuya is also frequently heard. The bombilla is the tube, of bone, reed, or metal (principally the last), through which the tea is sucked. The expanded end serves as a spoon, and the perforations in it are so small that the powdered leaves can not be drawn into the mouth. These utensils are sometimes made in very elaborate designs, and of precious metals.

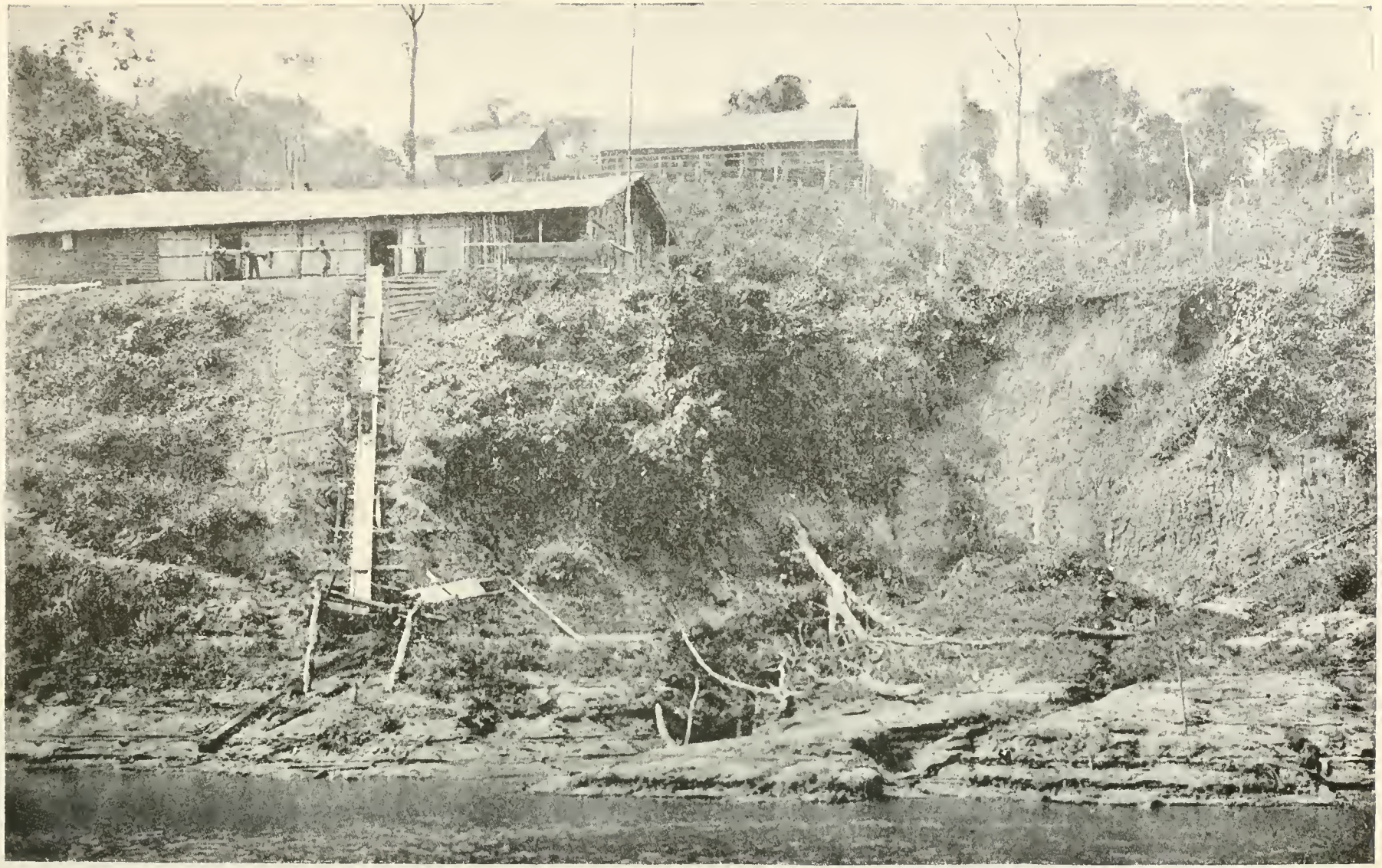
the supply was exhausted. To refuse to sip through the same *bombilla* is regarded as unpardonable rudeness and even an insult. The custom of the host taking the first sip originated no doubt in the intention to assure the guest that the potion was not poisoned and that he was safe among them. That this custom is still observed, not only among the natives but also among the settlers of European descent in the remote districts, is evidenced by the following account of a traveler who a few years ago journeyed through the interior of the State of Rio Grande do Sul:

Mate is also the drink and the pledge of hospitality all over the country districts. When I arrived in the evening at some small village inn, I found that the first act of my companions was to go to the general kitchen, where there was always a kettle of water kept continually boiling on the fire; everyone made free use of this water, taking his own utensils and his own bag of powdered *mate* from his pocket and mixing his own brew to suit himself. The ranchman, the cowboy, the stage driver, the stableman, and the passenger on horseback or in diligence, all lounged about the room, sucking *mate*, and no matter what the hour, day or night, the kettle boiled and some frequenter of the inn could be discovered preparing his own refreshment.

When I stopped for a short rest at a cottage on the way, almost the first act of the man who received me would be to charge his gourd with fresh powdered *mate*, then to fill it with the always ready boiling water, take a suck himself and then pass it to me; after I had sampled the decoction, the wife had her turn and all the other members of the family. To refuse to partake in this sincere act of welcome was to give offense, but I confess that it was unpleasant to put into my mouth the unclean tip of the pipe-like stem through which the *mate* drink was sucked. Except in these circumstances I grew to like *mate*, and even use it now, long after my return from South America. The old, old native keeps alive on *mate;* the German colonists find it good, and it displaces beer in their daily habits; the Italian settlers in the city or on the farm rapidly acquire the *mate* habit; the Spanish immigrant drops his high-priced wines and is as well satisfied with the nonalcoholic *yerba*, and even the north European peasant, beginning a strange life in this newest of new worlds, draws contentment and refreshment from this wonderful weed of South America.

Incidentally, it may be well to mention the fact that *yerba mate* may be prepared and consumed in a much more genteel fashion. The gourd is not at all a necessary adjunct, nor is the *bombilla*. It can be made in any teapot, and will taste just as good, if not better, when consumed like any other tea. The Germans in Curityba, and throughout Parana generally, prepare it by heating the water in a teapot to the boiling point, add a quantity of the powdered *mate*—proportioned to suit the taste and strength desired—allow it to boil for a few moments, and then pour in sufficient cold water to stop the boiling and to settle the fine particles, much as coffee grounds are settled in boiling coffee, and the tea is then ready to be served in cups. Many persons add a little sugar, some even a small quantity of milk, but the inveterate *mate* drinker takes his straight.

This is the method of preparing the tea from the powdered product, the form in which it is usually found in the countries of its origin as well as in the comparatively few European and North American



A YERBA MATÉ CHUTE IN PARAGUAY.

Scenes like the above are frequently met with along the banks of the Paraguay River, where warehouses have been constructed on bluffs on the river bank and the yerba maté is collected awaiting the advent of the steamer. The densely packed hide sacks of maté are slid down the chute to the deck of the vessel, the work of loading being thus greatly minimized.

grocery establishments having it on sale. Recently, however, some enterprising Brazilian firms have placed a *yerba mate* extract, sweetened with sugar, on the market, and in this form it easily dissolves in either hot or cold water, and makes a beverage whose refreshing and stimulating qualities are remarkable. Lest the writer's estimate of the virtues of this harmless and yet invigorating drink be deemed exaggerated and biased the following paragraphs, taken from the work of the Rev. Dr. J. A. Zahm, C. S. C., Ph. D., entitled "Through South America's Southland," are herewith reproduced as being the opinion of a disinterested traveler who is as well known as a scientist as he is as an eminent divine:

This kind of *mate* is put up in small tin cans, and I am greatly surprised that it has not yet been introduced into the United States. I am convinced it would, as soon as known, become immensely popular. It is always ready for use and easily served. Besides this it has all the virtues of tea and coffee and none of their deleterious qualities. For persons of weak and delicate constitutions it is the most invigorating beverage imaginable and leaves no disagreeable after-effects. For use in hospitals it is invaluable. As a temperance drink it is nonpareil. It has preserved a large part of South America from the debasing evils of alcoholism, and I can conceive of no more powerful aid to the cause of temperance in our country than the popularizing of a beverage that has proved so efficacious among millions of people in our sister continent.

Chemists and physicians who have made a special study of the effects of *mate* on the human system are all loud in its praise. They recommend it both as a tonic and as a stimulant, and declare that it is destined to become a favorite prescription in hospitals for the sick and the convalescent. It is less of an excitant than tea or coffee. Unlike these two beverages, it does not cause insomnia, neither does it induce perturbations of the heart. It is the best substitute known for alcoholic drinks of all kinds and is particularly recommended to those who suffer from debility or neurasthenia.

But more conclusive as to its virtues than the experiments of physicians and chemists are the results that have attended its use for more than three centuries in South America. Where *mate* is used drunkenness is practically unknown. Among people like the Gauchos of Brazil and the Rio de la Plata region, where beef is the chief article of food, *mate* takes, to a great extent, the place of bread and vegetables. Give an Indian or a *caboclo*—the native Brazilian squatter—a handful of *mate* and he will row or work all day without food. It seems to dispel hunger and invigorate the body as effectually as coca. The best evidence as to its value as a tonic and as a substitute for solid food was furnished during the terrible war between Brazil and Paraguay nearly half a century ago. Then, writes the Brazilian general, Francisco da Rocha Callado, "I was witness during a period of 22 days, to the fact that our army was almost exclusively nourished by the *mate* which we collected in the *hervaes*, the lack of provisions on that occasion not permitting long halts." * * *

So much for the unsolicited testimonial to *yerba mate* by the distinguished gentleman who was Col. Roosevelt's companion during his celebrated tour of South America in 1913. For the benefit of such food specialists as may desire to know something of the chemical constituents of the product as it is used in South America it may not be amiss to give the following table showing the component parts of *mate* as compared with tea (green and black) and coffee, on the

MEMBERS OF A RAILROAD CONSTRUCTION CAMP ENJOYING MATÉ.

Not only the natives of Paraguay and Brazil but thousands of European colonists are addicted to the use of yerba maté, and it is estimated that something like 15,000,000 people in South America habitually drink this delightfully stimulating beverage without incurring any of the ills attendant upon the use of alcoholic liquors.

authority of Dr. Caminhoa, professor of the faculty of medicine at Rio de Janeiro:

In 1,000 parts.	Green tea.	Black tea.	Coffee.	Mate.
Essential oil	7.90	6.00	0.41	0.01
Chlorophyl	22.20	18.11	13.66	62.00
Resin	22.20	36.40	13.66	20.69
Tannin	178.00	128.80	16.39	12.28
Theine or caffeine	4.30	4.60	2.66	2.50
Extract and coloring matter	464.00	390.00	270.67	238.83
Fibers and cellulose	175.80	283.20	174.83	180.00
Ash	85.60	54.40	25.61	38.10

Identically the same result is set forth in a comparative table made by Dr. Pekolt and indorsed by A. Moreau de Tours, analytical chemist of the Pasteur Institute of Paris.

From the above table it may be seen that *mate* contains much less of the essential oil than does either the green or black tea, and even less than coffee, and is consequently less of an excitant. It contains more of the resinous substance than does coffee, but less than the tea, and is therefore more diuretic than coffee and rivals tea in its stimulating qualities.

According to a recent report of United States Consul Maddin Summers, the price of *yerba mate*, f. o. b. Paranagua, Brazil, averages about 7 cents per pound, although there is some variation in the various grades, the finer qualities bringing from one-half to 1 cent per pound more than the average.

The use of this beverage, while almost unknown in the United States, is growing in popularity in Europe, the leading countries in the amounts imported prior to the breaking out of the war being Germany, France, and England in the order named. That it is not better known in this country is doubtless due to the fact that no systematic propaganda has been made to let the public know something of its excellent qualities. To the writer it would seem that the use of any harmless stimulant, that will in a measure take the place of the alcoholic beverages now consumed in such tremendous quantities, should be encouraged, and it is with the view of at least putting some small portion of the public on inquiry in regard to a drink which "cheers but does not inebriate" that this sketch has been prepared.

MOTOR CARS AND HIGHWAYS IN SOUTH AMERICA[1]

THE western man who proposed to ride around the coast line of South America on a motorcycle was evidently not a very practical individual; he endeavored to locate gasoline stations along a route stretching for thousands of miles, where only primitive trails exist. The other and equally important factor had been overlooked—the question of highways over which he would travel. Possibly he assumed that some kind of road could be found and the spirit of adventure was urging him to attempt this unique journey, to return to his homeland a travel-stained hero ready for the vaudeville stage.

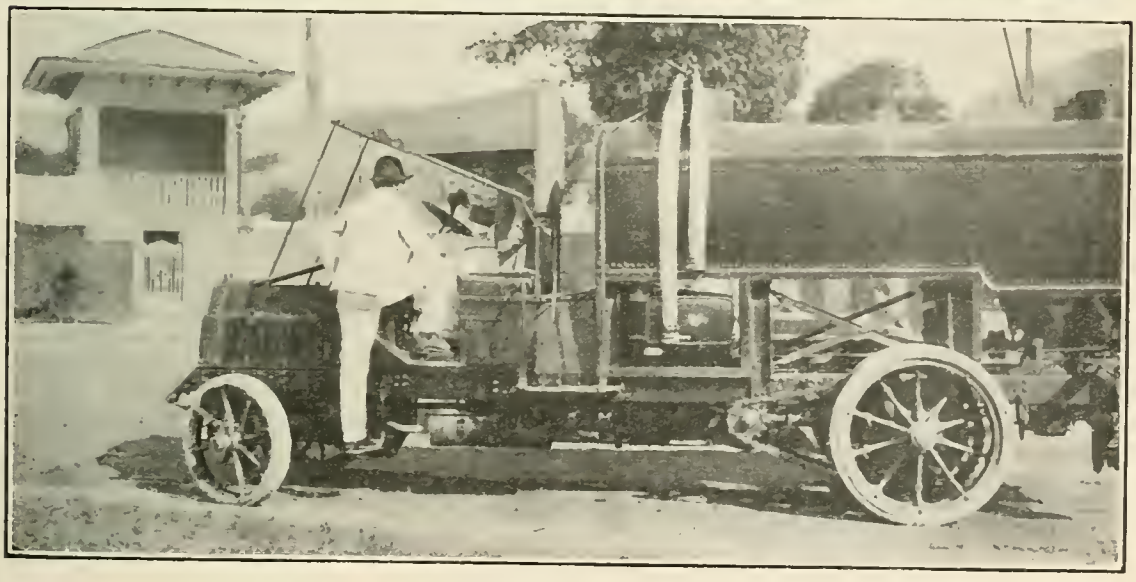
To the practical mind such questionable exploits rarely appeal; but the thoughts of dreamers sometimes set the masses to thinking and thereby prove a real benefit to humanity.

If we can not yet motor around the edge of the great Southern Continent for lack of highways, we may enjoy delightful rides through cities and their suburbs, guide our cars over cattle-bedecked pampas to snow-clad mountains and into the valleys of growing crops. We may note with interest how the automobile is changing the lives of the South Americans, as it is those of other lands, by drawing the tired man of affairs and his family to the life-giving air of the country; we may see the motor truck displacing the time-honored cart with its enormous wooden wheels and array of oxen or mules. In numerous sections we may see slow and picturesque methods of work giving place to the modern and practical.

Motor cars and highways are so intimately related, that in considering the progress of one we must to some extent inquire into the condition of the other. There is no doubt that the increase of the former all over South America is a most potent force in the cause of highway extension. The joy rider as well as the heavy truck owner see the need of better roads, and in many cases they are willing to vote in favor of local or national taxation in order to raise funds for road improvements and extensions.

Motor transportation for freight and passengers is making its appearance in some of the remotest regions of South America. In the barren nitrate section of Chile where the cart and mule have long done faithful service, one finds to-day a few automobiles. During recent travels through the nitrate fields several machines were placed at the writer's disposal, and they did excellent service over some of

[1] By William A. Reid, Pan American Union staff.



AUTOMOBILE AND HIGHWAY INCIDENTS IN BRAZIL.

Upper: A group of children in Monte Siao, taken five years ago, when school was dismissed in order that they might see the first automobile that visited the town. To-day the machine is no uncommon sight. Center: In interior sections the trail is difficult for the motor car; the ox cart has cut deep furrows, and the motorist must be prepared to smooth the course by having a pick and shovel handy. Lower: The type of motor street sprinkler used extensively in Rio de Janeiro.

A MOUNTAIN HIGHWAY NEAR RIO DE JANEIRO.

No section of South America furnishes more picturesque automobile trips than the numerous roads leading out of the Brazilian capital. The route above pictured is used extensively by motorists. It winds in and out of tropical growth and affords magnificent views at almost every turn.

URUGUAYAN ACTIVITIES.

Upper: A bit of highway in rural Uruguay. This bridge spans the Cagancha River, and is typical of other structures of a similar nature which are promoting motor-vehicle traffic to the ranch. Lower: A glimpse of many motor cars from Montevideo. This is a seaside scene near the capital. The picture was taken in February and indicates a phase of the life of the better classes at that season of the year.

the most trying trails—not to mention roads—to be encountered in any country. Furthermore, it was learned that eight motor trucks are to be given a trial in the handling of nitrate.

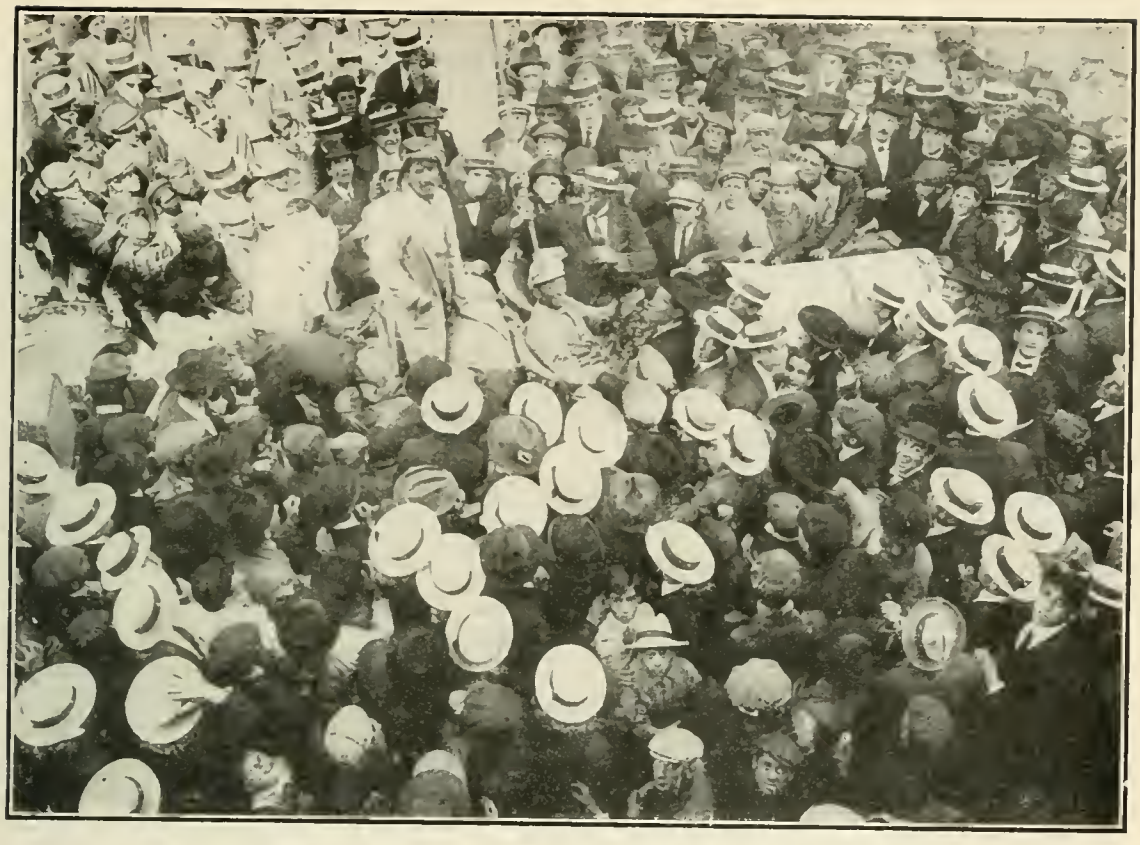
The two-mule team and cart used exclusively at present cost about $700. Small locomotives, worth several thousand dollars, may eventually be replaced, provided the motor truck proves its practical utility. The truck, costing $2,000 or $3,000, may be more economical than the old system; the clearing and making of a cheap road for the truck will doubtless be less expensive than the laying of railway tracks for the locomotives and dump cars. At any rate, the experiment is well worth watching by those interested in the sale of commercial cars; for should the 140 or more companies operating in Chilean nitrate eventually adopt the auto truck the demand will gradually grow to thousands of machines.

The power to operate the motor truck in Chile must be a low-grade oil rather than the expensive gasoline. This same element enters into the operation of motor-driven vehicles all over South America. The question of gasoline, as in this country, is serious and no doubt is retarding the sale of many machines.

A few months ago while the writer was in Paraguay, the first motor truck ever seen in that country, arrived in Asuncion. A considerable number of pleasure cars, especially those of cheaper grades, are in use in the Paraguayan capital; but the arrival of the monster truck created a new interest and hundreds of citizens watched the American agent demonstrate the possibilities of his machine. Even the President of the Republic and several members of his cabinet were willing to undergo the ordeal of riding over one of the roughest sections of highway that could be selected for the trials. The truck really proved a "wonder worker" and people and newspapers made favorable comments. Its advent in Asuncion revived a movement previously started to place several motor trucks in service between interior districts and the larger towns, where the only means of transportation to-day consists of carts and pack animals.

Paraguay has few modern roads but the country is undulating and naturally suited to motor-vehicle operation. The construction of highways will doubtless assume at least an impetus after the introduction of a greater number of automobiles. This country admits the automobile free of duty.

Bolivia, one of the world's most diversified countries topographically, has been for several years using the commercial automobile to great advantage. Railways were not being built with the activity that the country's trade demanded, and trucks were introduced on a regular run from Potosi to Sucre (150 miles), where highways are far from good. This was an experiment in freight and passenger service; and the cars long ago demonstrated their practicability.



THE WINNER OF A MOTOR RACE IN URUGUAY.

Enthusiastic crowd gathered about the victor of a cross-country contest.

A BIG GOVERNMENT MOTOR TRUCK IN BUENOS AIRES.

This truck belongs to the Bureau of Immigration. It is used to haul the baggage of newly arrived immigrants to the various railway stations as the newcomers start for their prospective homes.

ONE OF THE NEWER STREETS OF ASUNCION, PARAGUAY.

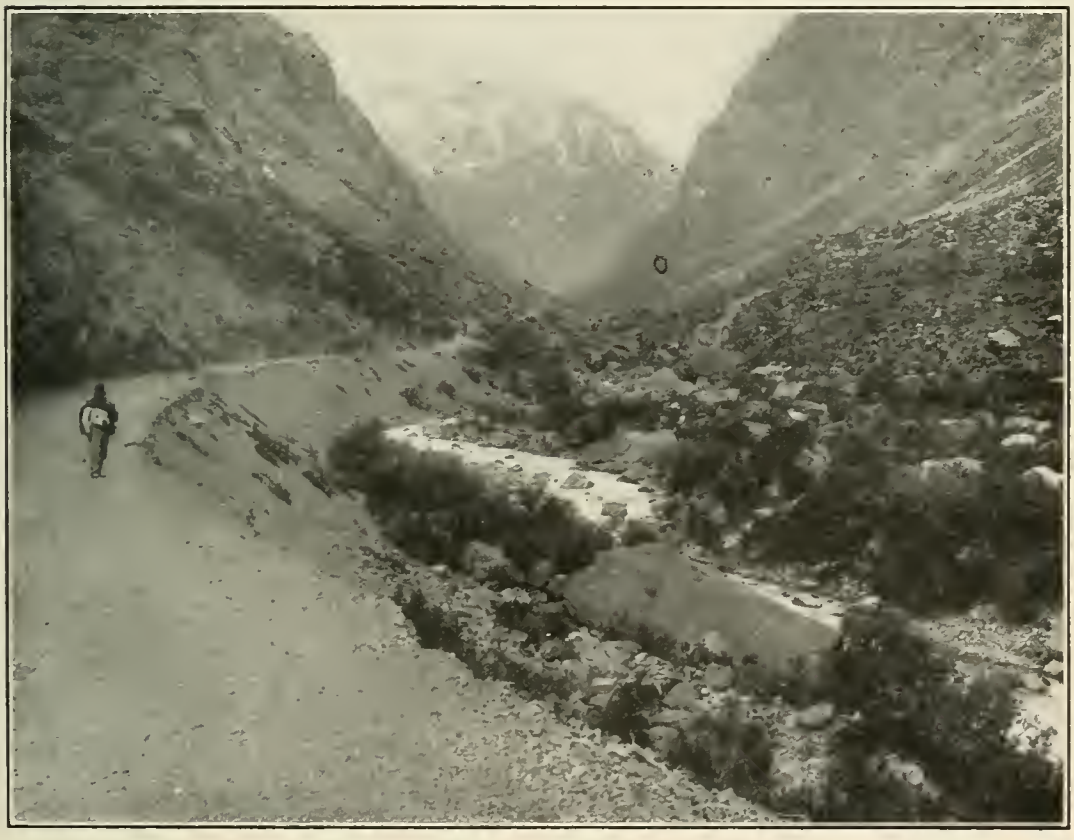
This view is looking down Asuncion Avenue in the Paraguayan capital. A few automobiles are in use, and quite recently the motor truck was introduced in this inland city.

MODERNIZING AN OLD ROAD IN THE SUBURBS OF TACNA.

This little city is situated in the desert section of the west coast. Irrigation from mountain streams has made some agriculture possible. Some of its citizens are buying automobiles.

A TOURIST PARTY IN THE ANDES.

Sometimes the tourist prefers the horse and hardships to the railway train and the tunnel. Over the same trail the American automobile has been driven. The pass is 12,000 feet high, the roads difficult but possible



TYPICAL MOUNTAIN ROAD IN THE HIGH ANDES.

This view, showing a section of the Uspalata Pass between Argentina and Chile, is a fair illustration of many parts of the road. The scenery along the route is wild and grand, but the motorist who attempts the pass must expect difficulties.

Since the advent of the truck in Bolivia the roads have received more attention than formerly; the pleasure car has become a necessity and their number has increased, especially in La Paz. On a recent occasion a Bolivian drove his car from La Paz to Sorata, 80 miles, over roads that were considered impossible for the motor-driven vehicle. This feat received wide newspaper publicity, and in reality showed the citizens that even the roughest roads do not entirely prevent the use of the automobile.

In Bolivia every citizen must give at least two days' labor a year upon the public highways. The distance between Bolivian cities over which stage coaches are now operating aggregates more than 700 miles; and those places off the railways, like Sucre, Tupiza, Tarija, etc., may demand greater transportation facilities now that the revival of the mining industry has reached such an active state, and railways can not be constructed quickly enough. The motor car supplies the missing link.

Peru has just granted a concession for a highway 125 miles long, starting from a point on the Juliaca-Cuzco Railway to the Madeira River or one of its branches. This will not be a route for automobiles, but the concessionaire must construct a road at least eight feed wide and keep it in good condition for 30 years. The government grants about half a million acres of contiguous land to the builder; as it is likely that these lands will gradually be exploited, the presumption follows that eventually the horse car must be displaced by the modern method of transportation. The concession is merely mentioned here to indicate one of the remote possibilities for automobiles; if they can be operated in the Bolivian Andes, as they are to-day, they may also find their way to the eastern Peruvian Andes.

Peru, as everyone knows, is not a land with many miles of automobile roads. There are, however, in the capital city 300 or more machines, many of which are used as taxicabs.

In Colombia the department of public works has made plans, backed by large Government appropriations, for constructing highways suitable for automobiles. Only a few of these can be here mentioned: $15,000 for a road from Popayan to Pasto; $8,000 for one from Pamplona to Casanare; $24,000 yearly for highway improvements from Bogota to Boyaca; $10,000 for a road from Santa Marta into the coffee district of that section; and a subvention of $30,000 for an automobile road to the medicinal springs about 30 miles from Barranquilla.

Notwithstanding the high price of gasoline, which at present is worth 50 cents a gallon in Caracas, Venezuela is buying cars and improving roads. During the last fiscal year 3 commercial trucks and 227 pleasure cars were shipped there from this country. In the

A TYPICAL FOREST HIGHWAY IN THE SOUTHERN ANDES.

This is a section of the winding road from Bariloche, in Argentina, to Puerto Montt, in Chile. A regular automobile line has been established from Neuquen to Bariloche. The latter is located on Lake Nahuel Huapi, from which point the traveler crosses the lake to the Chilean side, and then uses horse-drawn vehicles to reach the railways of Chile.

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THE REJUVENATION OF ANTOFAGASTA, CHILE'S GREAT NITRATE PORT.

Increased demand for nitrate is reflected in the business activity of Antofagasta. Two years ago the city streets were dusty and sidewalks almost negligible; to-day many blocks of paved streets and modern sidewalks are enjoyed. Motor buses have just been introduced. Upper: One of the streets undergoing paving. Center: Two American laborers cutting out a block of paving for inspection. Bottom: The block removed and some of the spectators of the incident.

first six months of 1915 Venezuela spent $86,000 in motor vehicles, and with one exception every car came from the United States.

A few months ago automobile service was established between the towns of Tumeremo and Ciudad Bolivar, the distance being 245 miles. At present it requires about 32 hours to cover the distance; the slowness being caused by the rough and winding roads. This time however, is much faster than the stage coach and horses, and ere long as the highway is cleared of stone and otherwise improved the service will doubtless be much more rapid. Ciudad Bolivar is a thriving port 600 miles up the Oronoco River; it has 20,000 people, and there are about 40 automobiles as a nucleus for a larger number.

The greatest natural area of South America, where many dirt roads provide fairly satisfactory commercial arteries, is found in Argentina, Brazil, and Uruguay; and in each of these countries highways are gradually extending and motor vehicles are multiplying.

A few months ago two American automobile agents in Argentina engaged in a race. One man drove a heavy truck and the other used a small runabout—a David and Goliath so far as size and strength might be compared. It was a peculiar race; the little car moved from starting point with rapid speed, but ere long the rough course selected by the committee began to stun and stagger the light machine. Then along came the giant; one pushed ahead, then the other; and those following the racers became more interested and betting grew active. The Buenos Aires papers devoted considerable space to the event, which finally ended in a draw. The keynote of the race, however, was automobile advertising, and in this respect it scored success.

The Argentine Touring Club, one of the leading organizations of its kind in South America, proposes to hold an automobile show this year in connection with other functions commemorating the country's centennial. American manufacturers of cars are expected to be well represented, and doubtless the enterprise will give a still further impetus to motoring in its various phases.

In the different sections of Arge tina one sees the motor bus or truck in steady use. In the sugar districts of Tucuman, in the far south from Bariloche to Lake Nahuel Huapi, and in the central pampa region the auto is engaged in both freight and passenger service. Although modern macadamized roads are few, the auto truck of 40 to 50 horsepower is commending itself as a burden bearer of wonderful possibilities. A rather peculiar use of the machine I observed in north Argentina; a 5-ton truck was following the flight of locusts, with chemicals and fighters, the latter endeavoring to exterminate at at least a few of the millions of these crop-destroying pests. This truck was a fine $6,000 machine and was operated by agents of the Federal Department of Agriculture.

Courtesy of T. A. Moore.

ANCIENT AND MODERN VEHICLES AS USED TO-DAY IN BOLIVIA.

Upper: The old stagecoach has its picturesque part to play and is to be seen on many Bolivian highways. Lower: One of the four motor cars now providing freight and passenger service between Potosi and Sucre. This is one of the world's highest automobile routes, the former city being at an altitude of 15,380 and the latter at 9,625 feet above sea level. The route covers about 150 miles, and the machine reduces the two days' trip to about 10 hours.

SCENE ON THE ALAMEDA, LA PAZ, BOLIVIA.

The world's highest capital city has many new residences and some new streets. The broad avenue here depicted is especially suitable for motor vehicles, which are gradually growing in number, not only in La Paz but in other cities of the Republic.

In 1912 Argentina imported 4,281 automobiles from various countries; in 1913, 5,115; in 1914, 2,185; during the first six months of 1915 that country received 629 machines from the United States. The figures indicate a gradual increase of motor vehicles, the smaller number of importations for the last two years being attributed to adverse business conditions following the outbreak of the European war.

Uruguay has more than 5,000 miles of National and State highways, and, compared to the size of the country, probably more good roads than any other South American Republic. Only a small percentage are macadamized. The Government proposes to spend a sum not in excess of $300,000 for highway construction this year, the appropriations coming from the country's general revenues. The contract has already been let to provide Mercedes, Paysandu, Salto, etc., with modern sewerage and water systems, and the paving of streets and suburban drives in these and other places foreshadows automobile activities. The fact that only 45 cars entered Uruguay during the first six months of 1915, compared with the increasing number in use in the country, shows that the storerooms are being depleted and the machines placed in service. Upon inquiry in Montevideo, I found that about $68 paid the duty and freight on a light car coming into Uruguay from New York.

As a general statement, it is safe to say that nowhere in South America do automobiles run so rapidly as in Rio de Janeiro, and in few other cities are they as numerous. The many circular and gradually lengthening boulevards in and about the Brazilian capital prove ideal tracks. There is a speed limit, but it is rarely observed, the double driveways diminishing the danger of collisions, but of course not entirely preventing them.

In the section about Pernambuco no good roads are to be found, but during the last few years the city's motor cars have increased from 50 to nearly 300, a pleasing fact for the manufacturer to note and one that calls on the local officials for more activity in highway building.

From Sao Paulo southward and westward most of the smaller cities have their quotas of automobiles, and here and there one finds a big motor truck. In the small town of Uruguayana, in the extreme southwestern section of the State of Rio Grande do Sul, the stranger arriving by river boat is startled by the sounds of perhaps a score of automobile horns all blowing in unison; the noise is deafening, but none the less interesting to the new arrival, who of course places the town among progressive Brazilian centers of activity.

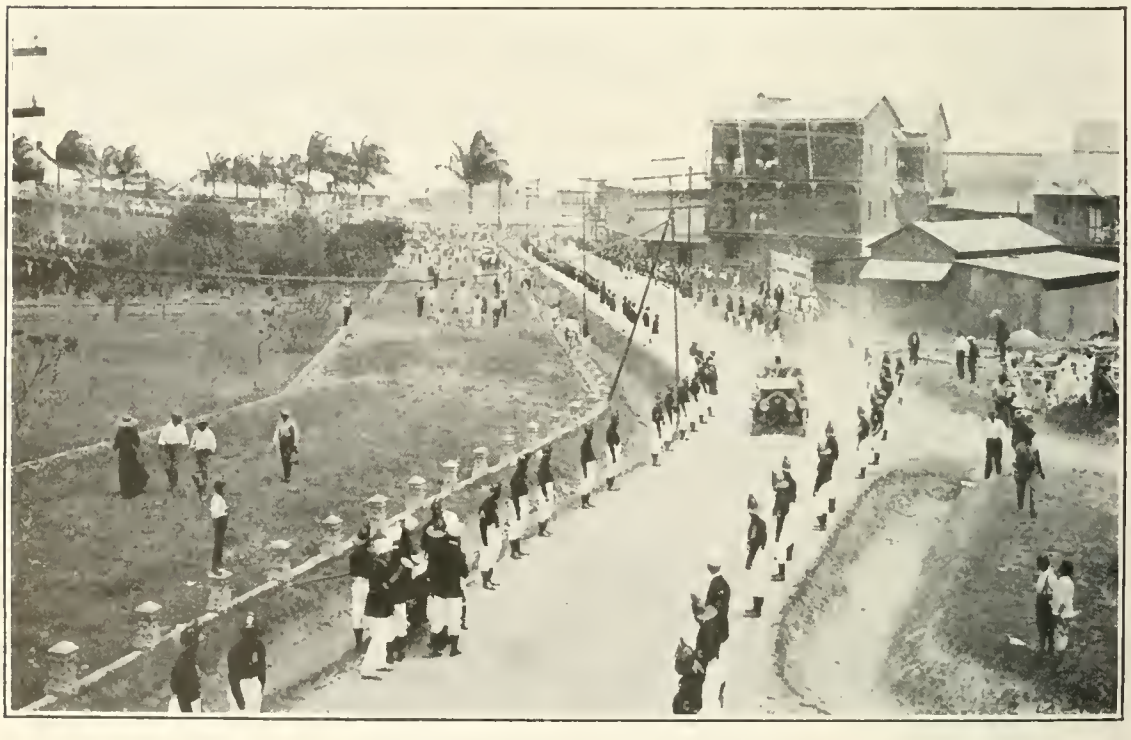
In 1913 this State spent nearly $700,000 on the improvement of public roads; in 1914 over $400,000 was devoted to similar purposes. Most of these roads were made in connection with Brazil's new colonies, which are being planted in more or less remote regions.

SCENE NEAR AREQUIPA, PERU.

In the foreground may be seen the new bridge and a section of highway leading toward Arequipa, a city of 40,000 people, founded by Pizarro in 1540. The numerous valleys of this region are very picturesque and are usually reached by railway from Mollendo.

OLMEDO AVENUE, GUAYAQUIL, ECUADOR.

The modernizing of Ecuador's chief port calls for better streets and suburban roads, gradually being constructed. The longest automobile course is that following the new railroad which is being built from Guayaquil to the coast at Santa Elena.



IN THE REPUBLIC OF PANAMA.

Panama is using convict labor in the construction of modern highways, and the new roads from Panama City southward to the ancient ruins and elsewhere are very popular with motorists. A section of these roads is pictured above.

A STREET AND A HIGHWAY SCENE IN COLOMBIA.

Upper: A street in Bogota, showing in the distance a procession which is being reviewed by the military authorities. Lower: View of a completed section of the new highway from Barranquilla to Usiacuri, which when finished will be nearly 30 miles long. The medicinal springs at the latter place will be reached by this road.

Those who have traveled inland by the railroad, starting at Almirante, in the northern part of the Republic of Panama, will recall the picturesque section through which the road passes. In this connection it is interesting to note that engineers have just completed a survey for a highway from Almirante via Rovalo to Boquete. The proposed route is about 75 miles long, and the road will cross the backbone of the Isthmus at 6,000 feet above sea level. The new highway will be of standard macadam construction, with 8 per cent maximum gradient and a minimum curvature of a 20-meter radius. It will do for the northern section of the Republic what the excellent roads are doing for the country from Panama City southward, opening virgin lands to commercial exploitation and drawing thousands of tourists in motor vehicles.

In returning to the United States the writer crossed Cuba by motor car, and at several places it was necessary to turn out of the road to allow the monster steam roller the right of way. This machine, typifying highway building activity, is the forerunner of the automobile; the former is literally "paving the way" for the latter. Cuba's new sugar crop of over 3,000,000 tons gives optimism to the planter, while many miles of excellent highways, and continued macadamizing activity, should not be overlooked by the motor-car producer who seeks wider markets. In two years the Cubans bought from the United States 40 commercial cars, valued at $68,000. In the same length of time more than 1,600 pleasure vehicles, worth $750,000, were sold, besides $100,000 worth of parts. About 90 per cent of the cars in use in Cuba are of American manufacture.

At present it may be said that the market for motor cars in South America is promising rather than active, for the economic reason that he who buys must also be a seller. The average farmer or ranchman who proposes to use a motor vehicle is not likely to purchase one until his products are sold. When the leading ports of the South American Continent are congested with raw products destined for foreign markets, as they are to-day, there is more or less inactivity with the farmer far back on the pampa. The dearth of ships therefore temporarily checks the ranchman from investing in a motor car.

These conditions, however, have other phases; and if steamers are not available for general cargo they are found for the purpose of transporting soldiers and horses to the battlefields of Europe. In the various seaports I watched with interest, if not emotion, the loading of splendid mounts aboard ships bound for the war zone. A large business in horses has developed, and still the demand on South America is for more animals. Even the depletion of the ranch in some sections is threatened. The shortage of horses has a tendency to popularize the substitute—the motor vehicle—and if the need is not seriously felt just now, the time is not far distant when increased

HIGHWAY CONSTRUCTION IN VENEZUELA.

Upper: One of the early stages of work on the road between Caracas and Guatire. Lower: Macadamizing and crushing, using the modern steam roller.

HIGHWAY CONSTRUCTION IN VENEZUELA.

Upper: Building in zigzag form in order to climb heavy grades encountered on the Tachira Road. Lower: View of a completed section of the Caracas-Guatire Road.

sales of machines will be the inevitable result. The horse is being exchanged for the automobile.

South America has no Lincoln Highway, and it may be years before international cooperation creates a sentiment that might crystallize to construct one. The foreign traveler who takes his automobile to the countries of South America to make a long overland journey will be disappointed. No Glidden tours, as we know them in the United States, are advisable. But many miles of excellent roads are to be enjoyed by the motorist, and these are found in the great cities and leading out into their suburban developments, more especially about Buenos Aires, Rio de Janeiro, Montevideo, and Santiago. One may motor from Argentina to Chile, but that tour is one of strenuous endeavor, only a few times accomplished. The common dirt roads of the pampas must for the present satisfy the automobile traveler, and he who attempts the mountain passes is sure to encounter dangers and difficulties.

PAN AMERICA IN THE MAGAZINES

Cuban Tobacco, in the April number of The Americas, is the title of an interesting sketch of the tobacco industry from the planting of the seed to the packing of the cigars for shipment. It is a clear and concise description and so informative that it is herewith reproduced in full:

The tobacco plant is indigenous to Cuba and its cultivation on the island dates back to the early part of the sixteenth century. Generally speaking, all the tobacco grown in Cuba is of good quality, but locally it is divided into five distinct grades, according to the district from which it comes. These are the "Vuelta Abajo," "Partidos," "Semivueltas," "Remedios," and "Mayarí."

"Vuelta Abajo" tobacco is grown in the Province of Pinar del Rio, situated in the western end of the island, and is the staple universally acknowledged to be the finest of all. The best tobacco-producing districts in this Province are: Las Ovas, San Juan y Martinez, San Luis, Sumidero, and Los Remates.

"Partidos" tobacco is grown in Havana Province, and is the kind which produces the best leaf for use as wrappers in the manufacture of cigars.

"Semivueltas," grown on the boundary of Havana Province and Pinar del Rio, between the town of Artemisa and Consolación del Sur, is a good burning and aromatic tobacco. It does not make good wrappers, however, so its use in local factories is limited to fillers.

"Remedios," from the Province of Santa Clara, is a very strong tobacco, burns well, and is used for blending with other grades. The district of Manicaragua produces the best tobacco of this class and a considerable amount of it was formerly marketed in Hamburg.

THE TOBACCO PLANT AND ITS FLOWER.

Tobacco belongs to the *Solonaceæ*, or nightshade family of plants. The genus *Nicotiana* has about 50 species, but the *N. tabacum* and *N. rustica* are the varieties which furnish almost all the tobacco of commerce. The top picture shows the plant, which grows from 2 to 8 feet in height, and has ovate lanceolate leaves, which are from 12 to 42 inches long and 8 to 24 inches wide. The flower, shown in the bottom picture, is white, verging sometimes to rose color.

CULTIVATING TOBACCO UNDER CANVAS.

In growing the best quality of leaf tobacco, especially that designed for wrappers, it is found that more uniform results are obtained by protecting the young plants under canvas, affording shelter from the direct rays of the sun as well as from the torrential rains of the Tropics.

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A TYPICAL TOBACCO FIELD.

The tobacco field must be constantly watched from the time the young plants begin to grow to the moment the leaves are cut and carried to the curing house. Especial care must be taken to see that no insects damage the leaf, and laborers are often employed even at night to seek for and destroy the caterpillars, which are the dreaded pests of the tobacco grower.

TOPPING AND CUTTING TOBACCO PLANTS.

Topping and cutting are the methods adopted to produce the growth of larger leaves, to prevent the development of seeds, and to keep the plant in the best condition possible. Men and boys pass between the rows of plants and remove the "suckers" at the top and cut away all defective leaves.

"Mayarí" tobacco is the lowest grade grown on the island and comes from the Province of Santiago de Cuba. The leaves are heavy and coarse and, not being acceptable for local consumption or in the manufacture of Cuban cigars for export, this class is usually shipped in bales and marketed in Europe.

A dry and sandy soil is most suitable for the cultivation of the tobacco plant and produces the best grade of leaves, both in aroma and burning qualities. Heavy, damp soil produces bad burning tobacco and is therefore poorly adapted to its cultivation. Flat, low-lying fields also are superior to the hilly districts, the latter producing a stronger tobacco but inferior in color and aroma.

Of all plants, tobacco is one of the most delicate and sensitive, necessitating the greatest attention and care, and the sowing and planting require skill and patience on the part of cultivators. The seed beds must be carefully prepared on the slope of a hill and three distinct sowings are usually made, the first about August 8, the second about August 20, and the last about the end of September. The first two sowings run great risk of failure either on account of excessive heat or equinoctial rains. The third sowing, however, is rarely unsuccessful, although in some years it may suffer from the effects of cyclones, which are liable to occur on the island from the middle of September to the end of October, or even on rare occasions in early November. As soon as the seeds commence to sprout, great care must be taken to protect them from the ravages of an insect known as the "cachasú," which, if left to itself, will devour and ruin whole seed beds.

From 50 to 60 days after sowing, the seedlings are transplanted to level, well tilled and carefully prepared ground, called the "vega," where they remain until maturity, some three months later. While maturing the plants require daily attention, to see that no insects attack them. Even at night one often sees laborers in the "vegas" examining the plants by the light of lanterns, carefully turning over the leaves to make sure that no caterpillars are there. In many cases the "vegas" are covered with cheesecloth awnings to protect the tobacco plants from the direct rays of the sun, and the effect of heavy tropical rains. The result of this is to produce large leaves of good color and silky appearance most suitable for wrappers, but inferior to tobacco grown in the open in aroma and the smoking qualities.

As soon as buds on the plants show signs of opening into flowers, they are removed in order that the leaves may benefit. Only a sufficient number of plants are left unpruned so that they will go to seed after the leaves have all been collected and furnish the seed required for the following season.

The first cutting is usually made about three months after the plants have been transplanted, but only the lower leaves, which are the most valuable for use as wrappers, are taken. A second cutting and, in case of a good crop, a third, are made at short intervals afterwards, depending on how quickly the other leaves attain their full size.

In close proximity to the "vegas," houses constructed of royal palm leaf stems, with roofs of palm thatch, are erected and in these the tobacco leaves are cured immediately after cutting. This operation taxes to the utmost the skill and experience of the grower, as excessive drought causes the leaves to wither, and excessive rains produce what is known as "green rot." For curing, the leaves are tied together in pairs and strung over wooden poles suspended from the roof of the houses. When the stem of the leaf is dry, advantage is taken of a damp or rainy day to remove them from the poles and place them in files, from which is made the selection for packing in bales. Large, fine, good-colored leaves of the first cutting are set apart for wrappers and are the most valuable class. The best "vegas" are said to produce nearly all wrappers, but there are not many such. As many as 5 distinct classes of wrappers are produced on most "vegas," and the remainder of the leaves, destined for use as fillers, are divided into 14 to 16 different grades.

THE TOBACCO WORM AT DIFFERENT STAGES.

The dread of the tobacco planter is the caterpillar, which develops from a large sphinx moth. It is sometimes called the "hornblower." It eats the leaf of the tobacco plant, as well as that of the tomato and allied plants.

TOBACCO BED SHOWING AWNING FRAME.

A seed bed in which the tobacco plant is cultivated before it is transplanted. This method is adopted for delicate leaf grown from the seed and develops the resistant quality in the mature plant.

Copyright by Underwood & Underwood

DRYING TOBACCO.

When the tobacco leaf is fully matured it is cut off and then sorted into bundles of the same length. These are hung up on poles or wires to wilt and dry, either under shelter or, in the Tropics, out in the open air.

A TOBACCO CURING HOUSE.

After the tobacco leaves are cut and gathered they are taken to the barn, or curing house, where the curing process is superintended by experts.

After the above selections have been made, the tobacco is tied in bunches containing 30 to 55 leaves each in the case of wrappers, or in bunches weighing about 6 ounces if filler. These bunches are technically known as "Gavillas," 4 of them making a "Manojo," and 80 "Manojos" go to make up a bale or "Tercio," which is packed in palm leaf or "yagua" and in this form distributed to the cigar factories. If intended for export, the bales are sewn up in an additional covering of strong drill cloth of a creamy color.

The methods followed by the leading cigar factories are very similar, and the various processes to which the leaf is subjected after being received from the country in bales may briefly be described as follows:

The tobacco to be used as fillers is removed from the bales and placed in large baskets. It is then moistened by immersion in water, the superfluous water shaken off, and left in this condition in bunches for 24 hours. It is taken to the stripping department and half of the main stem removed. This work is usually done by women, who are paid about 7 cents a bunch and earn on an average of $1 per day. The fillers are afterwards transferred to the "bodega," a long, dimly lighted room, and placed on racks for a period of about eight days to dry. After this the leaves are packed in barrels marked with the date and grade and these are stored away for periods ranging from eight days to five months, or even more, to allow the tobacco to become thoroughly cured. During this time highly paid experts, often including the factory manager himself, daily examine the contents of these barrels to pass on the condition of the leaf and decide whether or not it is ready to be made into cigars. On entering these rooms where the tobacco is stored during this process of fermentation, one is almost suffocated by the strong fumes of ammonia, and it is also curious to notice that the opaque window panes are stained a deep brown from the effects of the nicotine. It might not be out of place to mention here that sanitary conditions in factories are generally excellent, and in former years, when frequent epidemics of yellow fever ravaged the country, workers in cigar factories were practically immune from the disease.

The leaf tobacco intended for use as wrappers is treated separately. After being moistened as was the filler, it is sent to a special stripping department where the entire stem is removed. The workmen in this department are for the most part men and are paid 10 cents a bunch, which is 3 cents per bunch more than is paid to the strippers of filler. This is because wrapper leaves are more valuable and great care must be exercised not to injure them and in this way render them useless as wrappers.

This stripping of the entire stem divides the leaves in two parts, each a wrapper. They then pass through a process of selection according to color, grade, etc., a delicate operation requiring expert workmen, who are paid as high as $150 a month. From here they are distributed to the cigar makers, who must give a voucher for every 25 wrappers they receive, and at the end of the day account for them. Tobacco for filler, however, is given to them in unlimited quantities without accounting, but it is estimated that comparatively little is lost.

We must come to the actual making of the cigars. In the larger factories as many as 200 workmen are seated in a large room. Each cigar maker has a separate table and makes only one size, or "vitola," of cigar, which must conform in length and thickness with a standard measure provided for this purpose. Cigar makers are paid so much per hundred and the rate varies with the size and grade of the cigar. As a rule it may be said that their wages amount to about one-third of the selling price of the cigars at the factory, the higher grades costing more for labor than the smaller and cheaper.

The rapidity and skill with which the cigar makers work is remarkable. The most difficult operation is to put on the wrapper properly, and it may be truly said that each finished cigar is a small work of art. While the cigar makers are at work a man seated on a high platform reads to them. He is paid by the workers themselves, who contribute about 25 cents apiece a week. Most of the large factories have this custom, and on one occasion the writer was much amused in hearing read from a Cuban

INTERIOR OF A CURING HOUSE.

The removal from the curing house takes place only after the tobacco has passed through the various processes of curing. It is then ready for the manufacturer, having been assorted in the many grades used in making cigars by the grower or leaf-tobacco dealer.

Courtesy of The Americas.

SORTING AND GRADING TOBACCO.

Upper: In the curing house the leaves are sorted to grade them as to quality, and they must be delicately handled to prevent any injury that might reduce the grade. Lower: Selecting and dividing the leaves for wrappers and fillers after they have reached the factory.

Courtesy of The Americas.

A CIGAR FACTORY IN HABANA, CUBA.

Upper: Producing the finest handmade cigars. The rapidity and skill with which the cigar makers work is remarkable, and while they are busy with their fingers their minds are occupied with what the man in the high chair is reading aloud. Lower: The boxing room, where the cigars are graded and finally boxed for shipment.

newspaper a complete account of one of the recent championship baseball games at home. In passing, it might be mentioned that there is as much interest taken in American baseball, the standing of the leagues, etc., in Cuba as in the United States itself, and the local papers devote much space to baseball news with photographs and personal information about the best-known players.

After the cigars are made they are put up in bundles with the name or number of the maker and taken to a special department for classification, where the "vitolas" are checked before the workmen are given credit for them, and after this they are stored in large cedar cupboards to allow them to dry.

Next follows the "escojida," or special selection of the cigars according to grades, color, size, etc., so that the quality and general appearance of all the cigars in each box will be uniform. The men who attend to this are among the most highly paid. The cigars thus assorted are then packed in the boxes which finally reach the consumer, and these boxes when filled are put for several days in presses, which, by the way, are the only machinery used in Havana cigar factories. The rings or labels are put on in another department, the cigars replaced in the boxes, which are then closed, sealed with paper strips, and labeled with the many familiar brands. They are then ready for distribution and shipment.

The Ceiba or Silk-Cotton Tree, by Mr. C. H. Pearson, in The Cuba Review, is an instructive article dealing with the largest and most diversely useful of Cuban forest trees. The account contains so many interesting facts relative to the tree and the varied uses of the wood and the kapok or floss obtained from its fruit that it is reproduced in full:

There is no other tree in Cuba about which there is so much curious information as the ceiba, and everyone who visits the island is impressed by this wonderful and ever-present tree. It is a very conspicuous feature of the Cuban landscape. To the ordinary traveler in Cuba ceiba or seiba is the most familiar name for this tree, but in literature it is more often referred to as the silk-cotton or kapok tree, because it produces a cotton which is well known in the market as silk cotton or kapok. It is also called floss tree, or less frequently cork-wood tree, on account of the soft and light nature of the wood which occasionally comes in the American markets as cork wood. Botanically this tree is known as *Eriodendron anfractuosum*. The generic name is derived from the Greek *erion*, meaning wool, and *dendron*, tree. It received the specific name because of the enormous buttresses at the foot of the trunk, causing in some instances a marked deflection of roads. Practically all old trees have these root swellings developed to a remarkable degree, often extending for many feet from the base of the tree. These buttresses spread so extensively in some cases that a man walking around a tree is obliged to make a distance of 150 feet. In fact some of them are sufficiently high and wide to allow for a comfortable hut between them.

The ceiba is easily the largest tree in Cuba. It grows to the height of 80 or 100 feet and upward to 8 feet in diameter above the root swelling. No other tree in the West Indies has a loftier and more majestic appearance. It not only develops the conspicuous buttress at the ground, but a tree grown up in the open has enormous spreading horizontal branches. Old specimens sometimes possess large open crowns that spread 150 feet. The largest and most stately trees are found in all open plains and cultivated fields. The great size and noble aspect of some of the old ceiba trees are awe inspiring to the natives, and even the untutored colored people of Cuba are so struck with the majestic appearance of this tree that they call it the "God tree." Not even from the fear of punishment will they be induced to cut it down.

It reproduces itself freely by seed, and young trees spring up in great abundance in all recently abandoned fields or pasture lands where all age gradations are repre-

THE CEIBA OR SILK-COTTON TREE.

The ceiba is easily the largest tree in Cuba. It grows to the height of 80 or 100 feet and upward and 8 feet in diameter above the root swelling. No other tree in the West Indies has a loftier and more majestic appearance. It not only develops the conspicuous buttress at the ground, but a tree grown up in the open has enormous spreading horizontal branches, old specimens sometimes possessing open crowns that spread 150 feet.

Courtesy of the Cuba Review.

A SILK-COTTON TREE IN PORT OF SPAIN, TRINIDAD.

The picture shows the tree laden with its fruit pods, while lying on the ground are hundreds of the bolls which have fallen. A single tree often yields as much as 100 pounds of the floss or kapok, described in the accompanying article.

sented. It is a fast grower, and on cleared abandoned areas quickly gains the ascendancy over most of the other trees that may spring up. It is not, however, until the tree attains considerable size that it attracts the notice of the traveler. A very singular fact about this tree is that the flowers and fruits are produced immediately after it has shed its leaves. The branches and trunk of the ceiba are beset with numerous large sharp conical spines or corky protuberances, which remain on the tree until maturity. It is difficult to determine just how old these giants are, but it is claimed by some that they will attain the age of a thousand years. The large and well-known ceiba tree near Ponce, Porto Rico, which measures 108 feet in circumference 4 feet above the ground, by following the depressions and elevations of the trunk, is said to have been visited by Columbus in 1493, and that it was already at that time a tree of very large proportions. Those who have studied the ceiba trees for years are of the opinion that they do not attain an age of more than 250 or 300 years.

There is probably no other forest tree that has such a wide range of distribution. It seems to find its best development in Cuba and certain other West Indian islands, but it grows abundantly on the mainland of tropical America, tropical Africa, East Indies, and in many of the South Sea Islands. There is a good deal of superstition connected with this tree, and in many parts of the world the natives refuse to fell the ceiba because it is believed by many of the simple-minded inhabitants of the warm countries that ceiba trees growing close to their habitations protect them against the evil spirits and wild animals. The natives of Africa are quite prone to this belief and it is largely due to this fact that the artificial range of the ceiba has been greatly extended. The tree is probably not a native of Africa, where it is now growing more extensively than in any other part of the world.

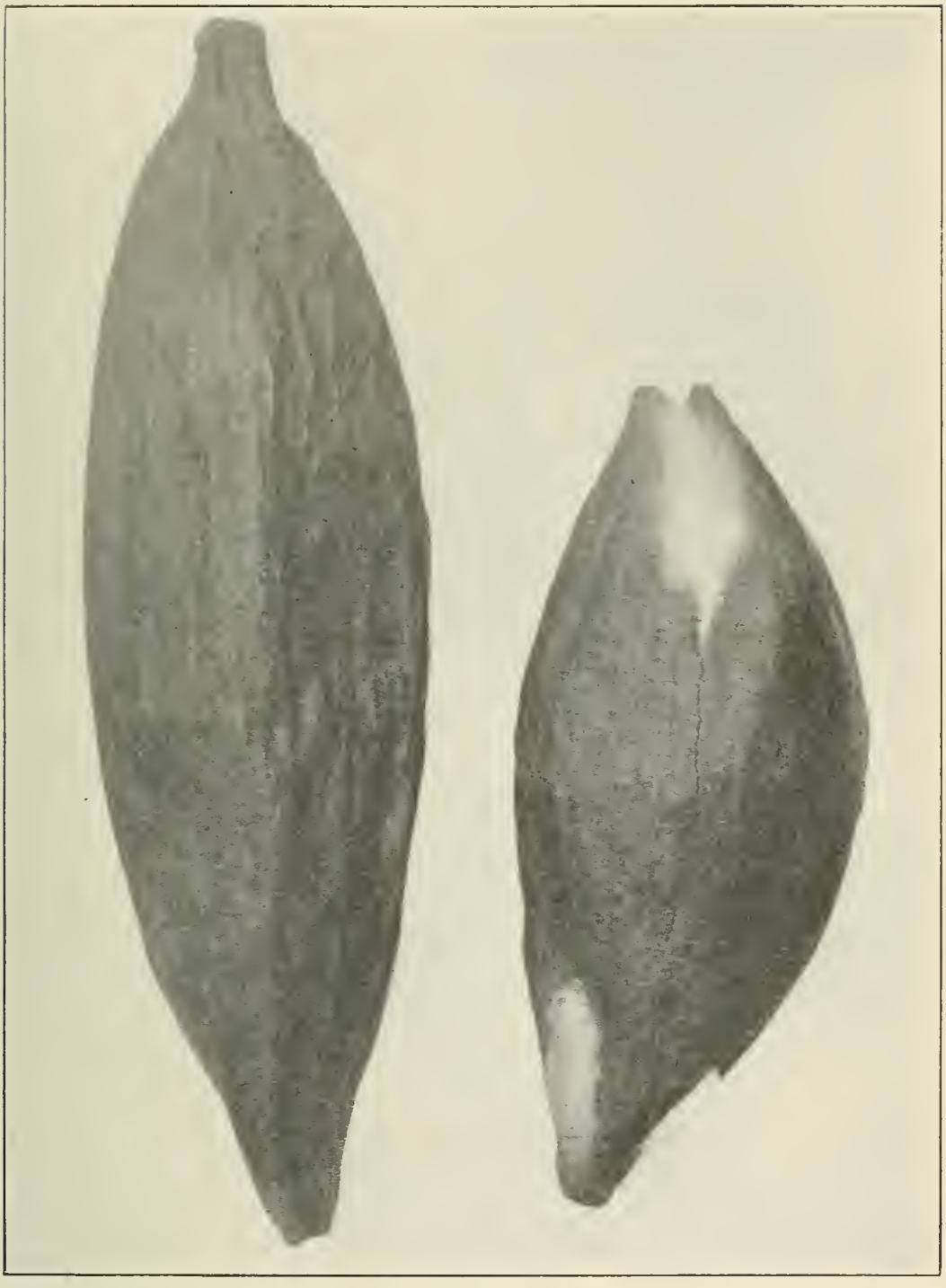
The uses of the ceiba are very numerous. Every part of the tree is available in one form or another, and it is believed that after these uses are better known to the industrial world the tree will become an important factor in the management of tropical forests and their utilization. The wood of the ceiba will sooner or later form an important article of trade, for its properties are such that it can easily be made available for a good many purposes. It is nearly white when freshly cut, quite soft, very light, and when well seasoned weighs only about 28 pounds per cubic foot. Ceiba wood has been tried as a substitute for cork, both for life preservers and for floats of fishing nets, but it is liable to become water soaked, and in its natural state is not available for making life-saving devices. The wood when seasoned in the log is apt to become discolored, but this defect can be easily overcome by cutting the log into planks while it is still green, or by seasoning the log in fresh water. The wood is perishable if it is exposed to the air for several years, but like most woods lasts very well permanently under water. Buoyant rafts are made of it, and it is on account of its unsinkable property that the wood is called corkwood. Occasional shipments of ceiba timber have been received in the United States, where the wood is now being used for purposes requiring lightness rather than strength. It is employed in making tubs and basins, and owing to its lightness, softness, and ease with which it can be worked, it should serve as a suitable substitute for our white pine for making toys, models, and numerous other small articles for which white pine is at present almost entirely used. The wood is suitable for light packing cases, for dry-goods boxes, and would do well for fruit crates. The trunks of the large trees are hollowed out and formed into canoes. Large casks are also made out of them.

A closely related Indian tree, *Bombax malabaricum*, or Indian silk-cotton tree, yields wood that has practically the same structural and mechanical properties as the ceiba, and German and English authorities have tested the wood of this Indian species and have found that it is one of the best matchwoods in India. Extensive areas in India have been practically cleared of this tree for use in match factories, and there is no reason why the wood of the West Indian ceiba could not be imported and given a thorough trial as a matchwood in order to lessen the constant drain upon the white-

Courtesy of the Cuba Review.

THREE VARIETIES OF SILK-COTTON TREES.

Left: The barriguda (*Chorisia crispiflora*) of Brazil, a tree with a peculiar trunk formation, which yields a great deal of silk-cotton. Center: The silk-cotton tree of Cuba, botanically known as *Eriodendron anfractuosum*. Right: The imbirassu (*Bombax tomentosa*) of Brazil, which yields a very fine grade of cotton which will not mat or harden with any kind of use.



Courtesy of the Cuba Review.

FRUIT PODS OF THE CEIBA TREE.

It is in these pods, the fruit of the ceiba tree, that is found the silk cotton, or kapok, as it is called in the trade. The pods are from 3 to 6 or more inches in length and from 1 to 2 inches in diameter and contain the seeds which are enveloped by the floss, much as is the cotton seed in its boll. This floss is in the form of a soft, matted mass of fine hairs, each of which is from one-third of an inch to an inch long. It is so light that a cubic yard of it packed tight weighs only 20 pounds.

pine forest of the northeast United States. The fiber of ceiba wood is shorter than that of white pine, but it yields wood pulp about equal to that of poplar and bleaches very readily. The Indian species is used extensively in the wood-pulp industry. The match and paper industries in this country should give the West Indian wood a test, for there are enormous quantities available, not only in Cuba, but throughout tropical America. The supply is by no means inexhaustible, but there are a great many mature trees in most of the islands of the West Indies and on the Spanish main in regions where hardwood forests occur.

Another product of this tree that is of considerable importance is the silk-cotton, floss, or kapok, as it is called in the trade. It is a silky substance that is borne in the capsule or fruit of the ceiba tree. These fruits or pods are from 3 to 6 or more inches in length and from 1 to 2 inches in diameter, in which the cotton surrounds the seed in a manner similar to that of our cotton plant. It is a matted, soft mass of fine hairs, each of which is from one-third of an inch to an inch long and from less than a thousandth to about only five-hundredths of an inch thick. It is so very light in weight that a cubic yard of it packed tight weighs only 20 pounds. The property that makes it so valuable is its extraordinary resistance to heat. It is one of the best nonconductors known and is said to be "warmer" than wool and six times lighter. An overcoat made of kapok is very light and yet prevents the cold from penetrating or the heat of the body from escaping. This is due to the fact that there is not only a great mattress of air among the fibers, but also much air inside them. One writer asserts that it makes ideal material for life-preserving mats, since in fresh water kapok can support 175 times its own weight. It is claimed that a man wearing a kapok waistcoat would float like a cork, and that no amount of soaking would ruin it; nor can it decay, for the hairs contain no protoplasm, being nothing but thin shells of cellulose which do not nourish microbes nor furnish a satisfactory lodging place for vermin.

One difficulty is that these fibers are not very adhesive and at the same time short and brittle, which prevents them from being spun by machinery used in spinning and weaving the ordinary cotton fiber. It has been spun, but it requires considerable skill and patience. In consequence of this the bulk of the material lacks commercial importance except as employed for stuffing mattresses, pillows, cushions, and sofas. For these purposes enormous quantities are used annually in the United States. It is exported in large quantities from the East Indies and West Africa; the variety from Java is regarded as a fiber of great merit, and is used for stuffing pillows and sofas. Its lightness, softness, and elasticity render it superior to the best qualities of feathers, wool, or hair. This material has been employed also as a buoyant material for packing life belts and for making hats and bonnets, and has even been suggested for the manufacture of paper and guncotton. Unfortunately the silk-cotton from the West Indies is accounted of less value at present, but it only remains for some one to start its collection in Cuba and Jamaica and ship it to American markets. It has been estimated that the average yield of silk-cotton from a single tree in Cuba is approximately 100 pounds. Many thousand of bales of silk-cotton might be collected annually in Cuba and turned to economic use. In 1914 a little over 20,000,000 pounds of silk-cotton were exported from Java and Sumatra, and of this quantity about 3,000,000 pounds were consumed in the United States for a great variety of purposes.

The kapok industry in Africa is likely to be developed to a considerable extent. Over 300,000 ceiba trees have been planted in German East Africa, of which more than half are in full bearing. Planting has also been carried on in Togoland (West Africa), and it is believed that the export trade from this region will be profitable at the high price now obtainable for the floss. Trees 30 years old were found to yield on an average about 90 pounds of unginned kapok per tree, while 6-year-old trees give about 21 pounds per tree. Extensive planting has been done in the Gold Coast (West

Courtesy of I. A. Barnes.

BASE OF A GIANT CEIBA TREE.

The little boy standing on one of the wings of the buttressed trunk gives some idea of the size attained by these giant trees of the Tropics.

Courtesy of I. A. Barnes.

A CEIBA TREE IN PANAMA.

The ceiba tree grows not only in Cuba and the West Indies generally but also in Panama and the Republics of Central America. The specimen pictured above shows the tremendous spread of the open crown when the growth of the tree is not restricted by its environment.

Africa), and several profitable crops have already been harvested and exported. The fiber in this region is said to be of good quality and varies from 0.8 inch to 1.1 inches in length. It brings 6 cents per pound. The planting of the kapok tree in the West Indies can not be too highly recommended. For regions in which it is impossible to raise more profitable crops, two Brazilian trees closely allied to the ceiba should be tested. One of these is the barriguda (*Chorisia crispiflora*), which has long and rather strong fiber. The other is the imbirassu (*Bombax tomentosa*), which yields a much finer cotton and does not mat or tend to harden with any kind of use.

The cotton is gathered with the seed and shipped in that condition. It must then be ginned just like ordinary cotton, and the seeds which have the appearance of cotton seed are used for the oil they contain. The oil expressed from the Java seed in Holland approaches very closely in its properties to cottonseed oil; the better grades serve for converting into butter substitutes and the poorer grades for soap making. Not only are the seeds used, but the inner bark of the tree also affords a fiber somewhat resembling the Cuban bast. It is strong and used locally for binding material. It bleaches readily and makes a strong, white, opaque paper. The root bark is emetic and has a therapeutic value. The leaves pounded and mixed with a little water yield a mucilagenous juice used by the inhabitants of some parts of the Tropics as a wash for their hair.

La Ciudad de Buffalo, in a recent number of the Spanish edition of the Bulletin, is a brief descriptive and historical account of that very lively manufacturing city. The following is an English version of the story:

Buffalo, the electrical city, is situated about equally distant from New York, Chicago, and Boston. Its location at the head of navigation of four of the Great Lakes gives the city a vast commercial importance, as well as affording the population during the summer months a veritable inland ocean for pleasure cruising. Buffalo has a water front about 20 miles long, and the shipping is very active. Another trade artery which has been largely responsible for the city's growth is the barge canal; the latter traverses the State of New York for several hundred miles and connects with the Hudson River. This canal, considered in its time one of the most gigantic undertakings, was completed in 1825, from which date Buffalo started its rapid growth.

Buffalo takes its name from the large distinctively American animal which frequented that section many years ago. As was the case with numerous other cities of the United States, French trappers and explorers first settled on the site of Buffalo. This was as early as 1788, and a trader named Winney is believed to have built the first white man's cabin. One Ellicott, however, is generally conceded to be the "father of Buffalo."

The city is famous for the electrical power that has been developed in close proximity, and the people have made extravagant use of it in all lines of commercial and industrial enterprise. This fact was strikingly illustrated in 1901, when the Pan American Exposition presented to the admiring gaze of the nations of the world the greatest electrical display that had ever been seen up to that time.

THE AMERICAN BISON, POPULARLY CALLED THE "BUFFALO."

This distinctively North American species of the ox family is popularly and erroneously known as the buffalo. The original range of the animal appears to have been the whole of the North American Continent west of Lake Champlain and the Hudson River and south of the Ottawa and Columbia Rivers, with the exception of certain areas along the Atlantic seaboard. During the latter part of the eighteenth century herds of these animals were still found in western New York, and one of their favorite haunts seems to have been a creek which empties into the Niagara River about 20 miles above the celebrated falls of that name. The stream became known as "Buffalo Creek," and when a village was finally started at its mouth, it, too, was given the name of Buffalo. That little village has now grown into a magnificent manufacturing city, ranking in point of population as the tenth among the cities of the United States.

A BISON GROUP IN THE BUFFALO ZOO.

As population in the Eastern States grew the bison was crowded westward. Soon none of the species could be found east of the Mississippi River, but for nearly a century great herds of the animals, sometimes as many as 10,000 in a single drove, still roamed the vast plains and prairies of the West. The value of their hides, however, awakened the cupidity of ruthless hunters, and the animals were exterminated by thousands until at present only the few score left in Yellowstone Park and some small herds in various zoological parks are left.

THE HEART OF BUFFALO—SHELTON SQUARE.

In this section may be found some of the best examples of modern architecture in business and office structures. To the left is seen the White Building, in the center background the Prudential, in the right foreground the artistic building of the Commonwealth Trust Co., and in the right background the D. S. Morgan Building.

VIEWS OF BUFFALO.

Top: The Y. M. C. A. Building. Center: The Federal Building and Post Office. Bottom: Lafayette Square, with the War Monument in the center.

ARTISTIC BUILDINGS IN BUFFALO.

Left: The Buffalo General Electric Co.'s building. Right, upper: The Public Library, in Lafayette Square. Right, lower: The Buffalo Savings Bank.

SOME OF BUFFALO'S MODERN BUSINESS BUILDINGS.

Left: Home of the New York Telephone Co. Center: Hotel Statler, one of the finest hostelries in the country. Right: The Erie County Bank Building.

The population of Buffalo to-day is 444,915; and this is increasing at the rate of 10,000 yearly. The city is, especially by reason of the enormous electrical power available, well suited to manufacturing. As evidence of activity of this kind it may be stated that of the city's population nearly 70,000 are employed in factories. The latter are increasing at the rate of about 50 a year; in other words, each month sees approximately 5 new factories established in or near Buffalo. The capital already invested in manufacturing is nearly $200,000,000. The last United States Census showed 339 recognized lines of manufacture in the country, and of these Buffalo produces 200. Valued in dollars the output of Buffalo factories is about $218,804,000 annually. A few of its products are those of the slaughtering and meat-packing industries, foundry and machine-shop products, railway cars, flour and other food products, soap, clothing, iron and steel products, ships and barges, saddlery and harness, medicines, automobiles, refined petroleum, lumber, and many others. There are 13 Buffalo industries that have an annual output valued at from $1,000,000 to $5,000,000. It is the ninth city of the United States as regards manufacturing.

For transporting the products of this beehive of industry there are 17 different lines of railways that have terminals in Buffalo, and for lake and river commerce there are 10 steamer lines. The city's gross tonnage of products exceeds that of Liverpool and is double that of any Pacific port of the United States. Seven thousand vessels arrive and depart from Buffalo annually.

Some years ago Buffalo found that her canal across the State to tidewater was too small for her increasing traffic. Accordingly, State aid was secured by appropriations, amounting to $130,000,000, and by the end of the past year the enlarged canal was ready for service. The service greatly facilitates freight traffic, not only from Buffalo but from the vast region of the Great Lakes.

The people of Buffalo pride themselves on their love for the fine arts, a feature which has been cultivated and fostered by the generosity of a wealthy resident who provided the city with a magnificent art building with treasures from every land. The influence of this philanthropy has been very marked, and students from all walks of life have availed themselves of the facilities of the institution. The building itself is of white marble and is said to be the finest example of Greek architecture to be found in the United States.

Fine private homes form another feature for which Buffalo is famous. On many of the residential streets the detached plan of houses provides many attractive ideas. These houses are separated by grassy plots of land varying in size from half an acre to large areas. Money has been lavishly spent in numerous cases, and the

TWO BUFFALO EDUCATIONAL INSTITUTIONS.

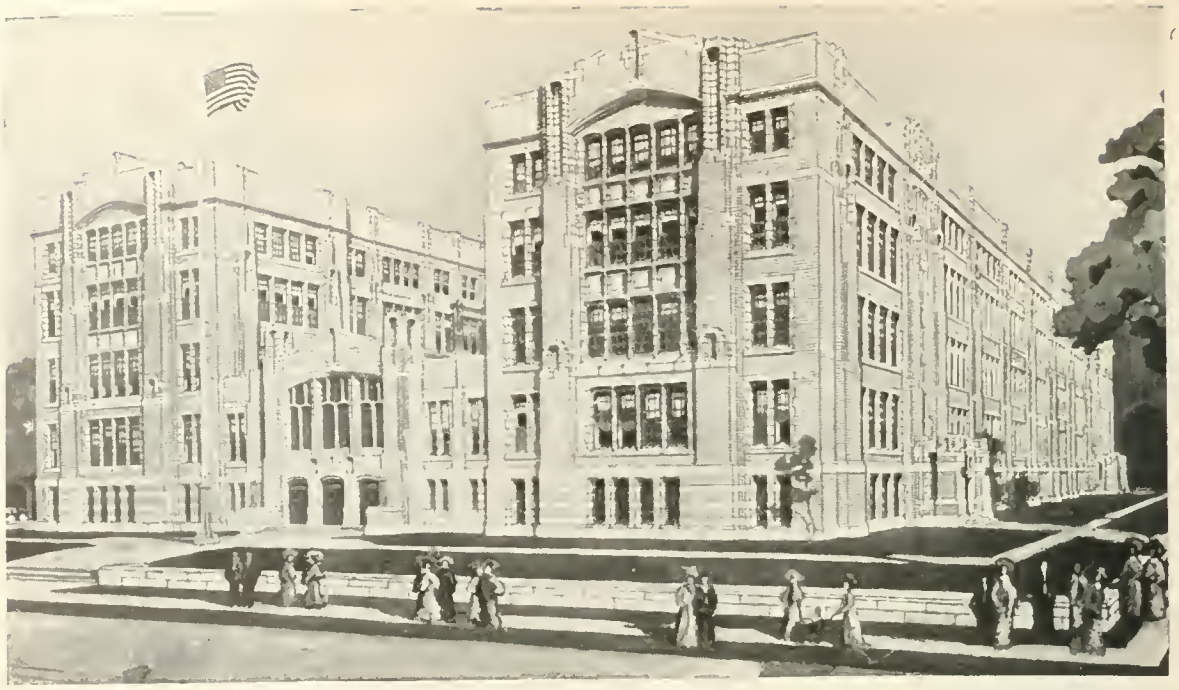
Among its many other advantages Buffalo boasts of its fine educational facilities. Nearly 70,000 pupils attend the public schools of the city and, in addition, about 25,000 attend the various parochial schools. In the upper picture may be seen the new Buffalo Normal School; in the lower, the new Technical High School.

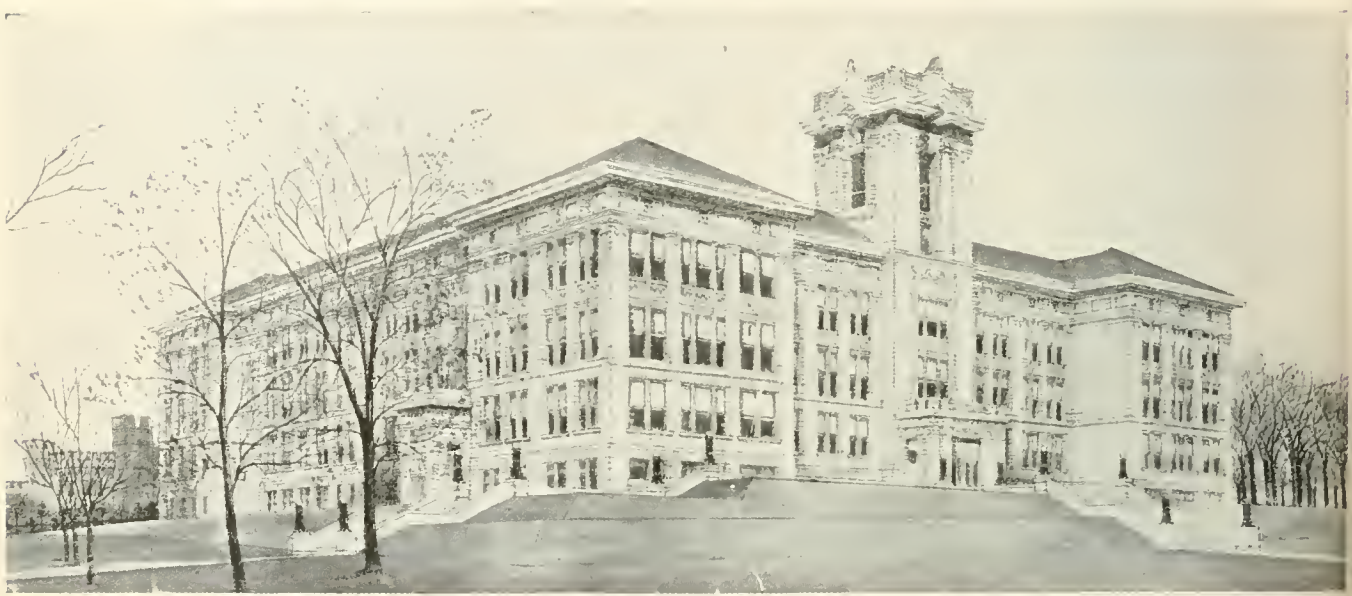
SOME FINE EXAMPLES OF BUFFALO ARCHITECTURE.

At the top are shown, to the left, the Seventy-fourth Regiment Armory; to the right, the Sixty-fifth Regiment Armory. The lower pictures show the City Hall to the left, and the Convention Hall to the right.

THE ALBRIGHT ART GALLERY, BUFFALO.

The esthetic life of Buffalo centers about the Buffalo Fine Arts Academy, which, through the generosity of Mr. J. J. Albright, has been provided with a palatial art building. It is located on a bluff overlooking the lake in Delaware Park, and in honor of the donor is called the Albright Art Gallery. The art school associated with the academy has done admirable work. In the advanced classes the standard of efficiency is high, the corps of instructors comprising artists of distinguished ability. There are classes in drawing, painting, and modeling from the antique and from life, in composition, decorative design, metal work, wood carving, bookbinding, etc. Scholarships are awarded to a limited number of students whose work shows exceptional ability and progress.





TWO SCHOOL BUILDINGS AND A BANK IN BUFFALO.

Top: The new Hutchinson High School. Center: The Masten Park High School. Bottom: The new home of the Manufacturers & Traders' National Bank.

VIEW OF NIAGARA FALLS FROM THE CANADIAN SIDE.

This greatest of all known waterfalls is only 20 miles from the city of Buffalo. Aside from their scenic beauty and grandeur, making them famous throughout the civilized world, these falls have been an important factor in promoting the remarkable growth and prosperity of Buffalo. Since the ingenuity of man has harnessed their tremendous power and the great hydroelectric installations have been an accomplished fact, the cheapest power in the world for manufacturing enterprises has drawn hundreds of industries to the city. The five companies now located at the Falls are developing about 150,000 electric horsepower. As a result, of the 339 recognized lines of manufacture produced in the United States to-day no less than 200 are represented in Buffalo's output.

distinctive styles of architecture have contributed to the general embellishment of the city.

Buffalo has long been noted as the convention city, by reason of its central location and excellent water and rail facilities, combined with accommodations for crowds at numerous fine hotels.

As is natural in a great city, the subject of education has been one of the most important public questions, and unusual facilities have been provided. The public-school system has been modernized along all lines, and the high schools turn out young persons with a fine education, acquired under able instructors and without cost to the pupil.

In the higher arts and professions there are a number of institutions that enjoy a national reputation and attract students from many States.

On January 1, 1916, the city of Buffalo adopted the commission form of government, five men, instead of the one ordinary mayor, heading the executive department. These five men, called commissioners, were elected by popular vote, and their terms of office are four years. One of the number is the chairman of the commission, or mayor, whose salary is fixed at $8,000 a year. The salaries of the others are $7,000 each. The city's activities are classified under five heads, one commissioner being assigned to each division of the government.

The streets of the city are splendidly paved, a fact that adds materially to the advantages of motor vehicles, of which there are many thousands in use. Beyond the city limits there are excellent highways leading in all directions, and as a consequence the Automobile Club has grown to be the largest in membership of any similar organization in the world.

The chamber of commerce publishes a monthly paper called the Live Wire. This name typifies the business activity of this great organization, which is always instrumental in aiding the city in every department of commercial, industrial, and civic activity.

Closely associated with the manufacturing interests of Buffalo and vicinity is the great amount of electrical energy that has been made available by utilizing a portion of the water flowing over Niagara Falls. The use of greater quantities of this water, however, aroused public sentiment, as it tended to affect the beauty of the great cataract of Niagara.

A company was formed and water was utilized after passing over the falls, and at points on Lake Ontario, so that the section of New York State adjacent to the lake is a vast area containing many cities and towns that depend on electrical energy for countless industries. The current is also conducted by wires to many distant parts of the State.

FOREIGN TRADE, LATIN AMERICA, 1915

The following statement gives the statistics of the foreign trade of Latin America for the year 1915 available by the Pan American Union on May 1, 1916:

	Imports.	Exports.	Total.
Argentina	$220,085,951	$541,532,224	$761,618,175
Bolivia	7,695,894	36,306,693	44,002,587
Brazil	146,423,000	257,779,000	404,202,000
Chile (first 6 months)	23,270,488	47,708,272	70,978,760
Colombia	18,658,179	29,265,349	47,923,528
Cuba	128,132,090	219,447,322	347,579,412
Guatemala	5,072,476	11,566,585	16,639,061
Honduras	5,875,000	3,858,000	9,733,000
Paraguay	2,303,741	8,021,876	10,325,617
Uruguay	36,378,825	76,222,298	112,601,123
Venezuela (first 6 months)	6,224,545	12,990,252	19,214,797

DISTRIBUTION OF TRADE.

Latin American imports from and exports to leading commercial countries in 1915.

ARGENTINA.

	Imports.	Exports.
Total	$220,085,951	$511,532,224
United Kingdom	65,748,411	160,022,860
United States	54,474,137	87,147,548
Italy	20,533,328	39,711,220
France	12,911,330	39,144,306
Germany	5,483,711	.....

BRAZIL.

[First 9 months.]

Total	$106,431,394	$173,042,837
United Kingdom	23,438,078	24,297,710
United States	31,674,946	71,312,668
France	5,196,539	18,820,292
Italy	5,029,995	3,794,106
Portugal	5,157,626	1,946,668
Germany	2,202,891	110

CUBA.

[Fiscal year July 1, 1914–June 30, 1915.]

Total	$128,132,090	$219,447,322
United Kingdom	14,098,157	24,218,061
United States	78,971,636	185,995,364
France	4,240,171	854,035
Spain	10,226,532	2,910,591
Germany	2,218,556	644,582

Latin American imports from and exports to leading commercial countries in 1915—Con.

HONDURAS.

[Fiscal year Aug. 1, 1914–July 31, 1915.]

	Imports.	Exports.
Total	$5,875,000	$3,858,000
United Kingdom	303,000	1,000
France	55,000	
United States	5,177,000	2,987,000
Germany	96,000	690

VENEZUELA.

[First 6 months.]

Total	$6,224,545	$12,990,252
United Kingdom	1,230,982	320,277
United States	3,803,102	7,378,298
France	219,692	1,654,633
Spain	242,139	710,641
Italy	256,110	376,114
Netherlands	441,883	1,386,849

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED UP TO MAY 5, 1916.[1]

Title.	Date.	Author.
ARGENTINA.		
Results of first year's operation of agrarian pledge law	1916. Feb. 23	John S. Calvert, vice consul, Buenos Aires.
Coal shortage	Mar. 11	Do.
Argentine notes: Estimates of corn acreage for season of 1915–16—Federation of commercial associations in Argentina.	...do...	Do.
Argentine monetary circulation	Mar. 24	Do.
CHILE.		
Public radiotelegraphic service	Mar. 1	L. J. Keena, consul general, Valparaiso.
Tariffs for street railways, telephones, light and power company	Mar. 21	Do.
COSTA RICA.		
Annual report for 1915 (first section)	Mar. 29	C. Donaldson, consul, Port Limon.
DOMINICAN REPUBLIC.		
New sugar plantation in Santo Domingo district	Mar. 24	Carl M. J. von Zielinske, vice consul, Santo Domingo.
Logwood situation	Mar. 30	Do.
Annual report on commerce and industries for 1915	Apr. 11	Do.
HONDURAS.		
Commerce and industries for 1915, annual report on	Mar. 18	Stanley L. Wilkinson, vice consul, Tegucigalpa.
Guatemala candy in Honduras	Mar. 29	Walter F. Boyle, consul, Puerto Cortes.
Honduran cattle for the United States	Apr. 5	Francis J. Dyer, consul, Ceiba.
MEXICO.		
Logwood in Yucatan and Quintana Roo	Apr. 4	Claude E. Guyant, consul, Progreso.
Logwood	...do...	Do.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America, but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

BOOK NOTES

Civilization and Climate. By Ellsworth Huntington. New Haven, Yale University Press, 1915. xii, 333 p. 8°. Price $2.50.

Mosquito Control in Panama. The eradication of malaria and yellow fever in Cuba and Panama. By Joseph A. Le Prince * * * and A. J. Orenstein * * * With an introduction by L. O. Howard * * * New York, G. P. Putnam's sons, 1916. xvii, 335 p. plates. gold. maps. diagrs. 8°. Price, $2.50.

America and the Canal Title, or an examination, sifting and interpretation of the data bearing on the wresting of the Province of Panama from the Republic of Columbia by the Roosevelt administration in 1903 in order to secure title to the Canal Zone. By Joseph C. Freehoff. * * * New York, Sully and Kleinteich, selling agents, 1916. (1), 404 p. 80. Price, $1.50.

The Challenge of the Future. A study in American foreign policy. By Roland G. Usher * * * Boston, Houghton Mifflin company, 1916. xxi, 350 p. 8°. Price, $1.75.

Selected Quotations on Peace and War, with especial reference to a course of lessons on international peace * * * Compiled and published by the Commission on Christian Education of the Federal Council of the Churches of Christ in America, New York. 1915. 540 p. 8°.

A Handy Bibliographical Guide to the Study of the Spanish Language and literature, with consideration of the works of Spanish-American writers for the use of students and teachers of Spanish. Compiled and edited by William Hanssler * * * St. Louis, C. Witter, 1915. 63 p. 8°. Price, 50 cents.

Ships. By Bernard Nadel Baker. Assisted by J. Frederick Essary. Baltimore, John Murphy company, 1916. 199 p. 12°. (For private distribution.)

Leonidas Polk, Bishop and General. By William M. Polk * * * In two volumes. New York, Longmans, Green and Co., 1915. 2 v. 8°. Price, $4.00.

Some Engineering Problems of the Panama Canal in their relation to geology and topography. Published with the approval of the Governor of the Panama Canal. By Donald F. MacDonald. Washington, Department of Interior, Bureau of Mines, 1915. 88 p. Maps., diagrs. pls. 8°.

A Spanish Grammar for Beginners. By M. A. DeVitis. Boston, Allyn and Bacon, 1915. xviii, 334 p. 8°. $1.25.

The Annual Register. A review of public events at home [England] and abroad for the year 1915. London, Longman, Green and company, 1916. xii, 360, 196 p. 8°. Price, $6.00.

The Argentine Yearbook, 1915–1916. With short chapters on the Republics of Uruguay, Paraguay, and Chile. Published by Robert Grant and Co., Buenos Aires. U. S. agents, Donnell and Palmer, New York. Price, about $5.25.

Geografìa Mèdica y Patologìa de Colombia. Contribución al estudio de las enfermedades intertropicales. Por el Dr. Luis Cuervo Márquez * * * Bogotá, Camacho Roldan y Tamayo, 1915. New York, The Trow Press. 219 p. map. 8°. Price, $2.25.

The North-West Amazons. Notes of some months spent among cannibal tribes. By Thomas Whiffen, New York, Duffeld and Company, 1915. xvii, 314 p. plates. fold. maps. 8°. Price, $3.00.

Filibusters and Financiers. The story of William Walker and his associates. By William O. Scroggs. New York, the Macmillan company, 1916. ix, 408 p. front. Price, $2.50.

The Cruise of the Tomas Barrera. The narrative of a scientific expedition to western Cuba and the Colorados reefs, with observations on the geology, fauna, and flora of the region. By John B. Henderson. New York, G. P. Putnam's sons, 1916. ix, 320 p. plates. fold. map. 8°. Price $2.50.

Sketches of Spanish-Colonial Life in Panama. By Lady Mallet, wife of Sir Claude Coventry Mallet * * *. New York, Sturgis and Walton company, 1915. 81 p. plates. map. 4°. Price, $3.00.

Proceedings of the Conference on International Relations, held at Cornell University, Ithaca, N. Y., June 15–30, 1915. Boston, The World's Peace Foundation, 1916. ix, 418 p. front., 1 fold. pl. 8°.

Curso de Geografìa de el Salvador. Por Pedro S. Fonseca * * * San Salvador, Dutriz Hermanos, 1916. 157 p. maps. illus. 8°.

Manual Consular Colombiano. Por José Manuel Pérez-Sarmiento * * * Editado por Pelayo Quintero Atauri * * * Cadiz, Manuel Alvarez Rodriguez, 1915. 342 p. 12°.

ARGENTINE REPUBLIC

The AMERICAN CONGRESS OF SOCIAL SCIENCES which will be held in Buenos Aires in July, 1916, in connection with the centennial celebrations, has divided its work into 10 sections and has appointed committees for each section.——During the first quarter of 1916 the exportation of CEREALS, in tons, was as follows: Wheat, 623,215; maize, 479,195; flax, 276,580; oats, 140,817; barley, 12,860. ——The Agricultural Museum of Argentina has on exhibit samples of flour from more than 100 mills, and the MILLING INDUSTRY is being rapidly developed. Argentina exports annually about 130,000 tons of flour, Brazil being the best market.——By a recent presidential decree, the BUILDING of the Argentine Republic at the Exposition at San Francisco will be presented to the United States as a gift from the Argentine people.———The NORMAL SCHOOL recently opened at Concordia, Entre Rios, had more applicants for admission than it could accommodate.——The Argentine Central Railway inaugurated on March 29 its plant at El Tigre, which will supply ELECTRIC SERVICE on its lines between Buenos Aires and El Tigre.——Due to the war, Argentina has greatly increased her manufactures, especially of textiles. A new industry has just been developed of manufacturing BROOMS from the leaves of the "caranday," a species of wild palm very common along the coasts. Formerly, all the raw material for this purpose was imported from Belgium.——The production of WINE in the Argentine Republic in 1915 was 4,823,475 hectoliters, 3,882,660 or 80.4 per cent of which came from the Province of Mendoza, 806,284 or 16.7 per cent from the Province of San Juan, and 28,670 or 0.59 per cent from Salta. The area in grapes has increased from 73,581 hectares in 1907 to 132,479 hectares in 1915, or 80 per cent since 1907. The area now under cultivation will be greatly increased upon the completion of certain irrigation projects. The production of wine has increased proportionally, from 169,722,391 liters in 1907 to 482,347,579 liters in 1915 or 184.1 per cent. The importation of fine wines has decreased from 149,821 liters in 1912 to 25,549 liters in 1915, and common wines from 45,732,782 liters in 1912 to 17,739,660 liters in 1915. The exportation of wine from Argentina increased from 206,513 liters in 1914 to 862,377 liters in 1915, or over 400 per cent. The greater part of the exports went to Paraguay, Uruguay and Brazil, small shipments being made to France and Great Britain.—— Recent trial borings for GAS in the Delta of the Paraná have met with good results and it is expected that it will be found in sufficient quantity for piping to the Federal capital.——"La Nacion" gives

the exportation of CHILLED MEAT for the first two months of 1916 as follows: Frozen beef, 811,258 quarters; chilled beef, 185,992 quarters; as compared with 500,727 and 286,554 quarters, respectively, exported during the corresponding period of 1915.——The third ARGENTINE TELEGRAPHERS' CONGRESS closed its sessions in Buenos Aires on March 19, 1916.——Work will soon be resumed on the PORT WORKS OF QUEQUEN, and payment of obligations amounting to 1,300,000 pesos for 1915 will also be effected.——To facilitate the service, GASOLINE DEPOTS are to be placed at convenient intervals along the 1,500 kilometers of automobile routes in the Territories of Neuquén, Rio Negro, and Chubut.——The experimental station at Pergamino recently sent special machines for drilling-in BEANS to the Provinces of Mendoza and San Juan, where, owing to the special adaptibility of the soil, it is hoped to increase the area in beans.——The National Board of Education has authorized the founding of a school in Tucuman to be called the SCHOOL OF THE CENTENARY, in commemoration of the centennial celebrations.——Foreign STEAMERS AND SAILING VESSELS to the number of 1,534 with a total tonnage of 2,143,646 tons entered and cleared from the port of Buenos Aires during 1915, as compared with 1,633 with a total tonnage of 3,089,333 tons in 1914. There was an increase of 58,259 tons in the first two months of 1916, as compared with the corresponding period for 1915.——The sum of 322,000 pesos has been subscribed for the DREDGING of the port of Rosario and work is shortly to begin.——An AMERICAN EVANGELICAL CONGRESS met in Buenos Aires on March 28 to study important problems connected with the mission field.——A recent report of the Ministry of Agriculture states that about 2,000 hectares of the lowlands of the Department of Posadas, in the Territory of Misiones, are especially adapted to the growing of RICE. These lands yielded as high as 6,500 kilos of rice per hectare in the last harvest and there will be a greatly increased area sown the present year. The area of the department in yerba maté has recently increased from 200 to 700 hectares, and the last harvest from trees 8 to 10 years old yielded as high as 991 pesos net per hectare. Each hectare contains 1,089 trees, which often yield 18 kilos per tree, for which a price of 2.50 pesos per 10 kilos is obtained. An active propaganda is being made to increase the production of yerba maté as Argentina consumes annually about 60,000 tons of the dried product, of which it only produces 3,000 tons, 5,000 tons being imported from Paraguay and 52,000 tons from Brazil.——The BANK OF THE ARGENTINE NATION has issued its statement for 1915, which shows an increase in deposits of 89,012,019 pesos national currency. During the year the bank created and perfected a system for making agricultural loans which has been very

successful. The bank had 158 general agencies throughout the Republic during 1915, which number is expected to increase to 175 during 1916. Savings deposits increased from 231,763,244 pesos in 1914 to 310,861,915 in 1915. The number of depositors increased from 146,576 in 1914 to 181,503 in 1915. The present prosperous condition of the country is reflected in the increased totals of bank clearings, as shown by the statements of the 21 banks for February and March, 1916.——The Argentine Rural Society has recently published some interesting data on the development of the CATTLE INDUSTRY in Argentina. The importation of blooded animals for breeding purposes began in 1850, when 5 were imported, since when it has steadily increased and in the last 10 years 20,000 cattle, 20,000 sheep, and 4,000 horses have been imported. A single cattleman paid approximately 200,000 pesos gold for the Wright sheep ranch and imported at one time 900 sheep of the Lincoln breed. At present the Rural Society has on its register of pedigreed cattle 102,000 head of cattle, 25,000 horses, 20,000 sheep, and 9,000 hogs, with proportional figures for other kinds of animals.

BOLIVIA

A GOLD NUGGET weighing 14 pounds was recently found in the placer mines of Benedicto Goytia at Chuquiaguillo. This nugget has a maximum diameter of 13 centimeters and a maximum and minimum thickness of 8 and 3 centimeters, respectively, and is valued at $4,000. In the sands of this same river another celebrated gold nugget, valued at $4,500, was found by an Indian miner in the seventeenth century, and was placed on exhibition in the Museum of Natural History of Madrid. Much of the gold in the possession of the Incas at the time of the invasion of the Spaniards 384 years ago is said to have been obtained from the Chuquiapu and Chuquiaguillo Rivers, the name of the latter river meaning in the Aimara Indian language "Inheritance of gold." In Bolivia gold is widely distributed in veins and placers. Along the rivers which run in a northeasterly direction following the eastern slopes of the Andes there are extensive deposits of auriferous sands of great richness. The Chuquiapu or River of Gold upon which La Paz, the national capital, is situated contains within the city limits auriferous gravel washed down from the slopes of the Andean range, and during the colonial period the gold placer deposits of this river in the vicinity of La Paz were profitably exploited by the Spaniards.——The Quinta Normal or AGRICULTURAL SCHOOL of the Bolivian Government at Cochabamba has ordered the necessary equipment with which to

begin the teaching of the SILKWORM INDUSTRY. Miss Palizi, who has technical and practical experience in this industry, has been engaged by the Government as instructress.——The Corocoro branch RAILWAY, which belongs to the Bolivian Government, transported 17,731 tons of freight in 1915, as compared with 5,416 tons in 1914. This line increased its traffic in 1915, as compared with 1914, in the following proportion: Copper bullion, 66 per cent; merchandise, 21; mining machinery, 12; construction material, 30, and passengers carried, 85 per cent.——A normal SCHOOL especially intended for the residents of the rural districts in the vicinity of Tinugipaya has been established by the municipal council of that town. The National Government has installed a rural normal school at Calama, Province of Chaparé, and has provided for the issuance and maintenance of 30 competitive scholarships. The school at Quinta Muyurina has added to its courses commercial instruction and instruction in the arts and crafts. A night school for artisans was recently inaugurated at Potosi.——The medical and dental departments of the universities of Bolivia have conferred three doctoral degrees on women. One of these was a doctorate of dental surgery, conferred at La Paz in February last on Miss Hortensia Oropeza, who proposes to practice dentistry in the national capital.——El Tiempo, a daily newspaper of La Paz, Bolivia, calls attention to the advantages the eastern part of the Republic offers for the manufacture of DYES from dyewoods found in the forests of the country, and especially those in the thickly wooded slopes of the Andean range. Another promising industry of Bolivia which awaits exploitation is the PETROLEUM DEPOSITS, such as those found in the Pacajes zone and the ones mentioned in the pamphlet published by Enrique Arias on the petroleum fields of the Republic.——Humberto Asin, a Bolivian engineer, completed, during the latter part of February of the present year, the construction of the second tower of 80 meters of the Viacha WIRELESS telegraph station, the erection of the first tower having been finished about the middle of that month.

BRAZIL

According to the MESSAGE of the mayor of the federal capital, read before the municipal council on April 3, 1916, the budget receipts for 1915 showed an increase over 1914 of 2,553 contos paper (conto paper = about $250), though they fell short of meeting the estimated expenditures by 1,701 contos. But for this small deficit the affairs of the city were in better condition than at any time during the

past 10 years.——On April 20, 1916, a UNIVERSITY FOR ADVANCED EDUCATION was inaugurated in the building of the Brazilian Historic and Geographic Institute. Courses under such eminent authorities as Dr. Oliveira Lima are offered, and the nature of the work will be similar to that performed by institutions of higher learning in other countries.——Estimates on the production of CORN AND RICE in 1916 are for the largest crops in the history of Brazil. It is estimated that the States of Rio, Minas, São Paulo, and Espirito Santo will produce more than 35,000,000 bags of corn, as compared with a production of less than 1,000,000 bags in 1915.—— The total receipts of the three NATIONAL STEAMSHIP COMPANIES for the year 1915 aggregated the following sums: Brazilian Lloyd, 21,418,135 milreis; National Coastwise Navigation Co., 9,210,771 milreis; Commercial Navigation Co., 11,303,659 milreis. The receipts of all these companies show material gains for 1915 as compared with 1914. According to press reports from the federal capital plans are under way for consolidating the Brazilian Lloyd & Coastwise Navigation Co.——Out of a total world production in 1915 of 150,000 tons of RUBBER, Brazil contributed 35,000 tons, or about 23 per cent. The world consumption of rubber increased more than 30 per cent in 1915, and the price has risen 50 per cent since December 15, 1915.——The preliminary plans for the AMERICAN CONGRESS OF WORKMEN, to be held in Recife, beginning on October 12, 1916, have recently been perfected by the organizing committees. Invitations to the congress have been sent out, and so far 368 organizations, representing 150,000 workmen, have signified their desire to take active part in its proceedings. The government of the State of Bahia has granted free transportation on its railway lines and on steamers of the Bahia Coastwise Navigation Co. to all delegates attending the congress.——"Linking up the Federal Capital with the States of São Paulo, Minas Geraes, and Rio de Janeiro" is the title under which the Jornal do Commercio of Rio de Janeiro tells of the great progress made in the last 10 years in TELEPHONE CONSTRUCTION. Connection between Rio de Janeiro and São Paulo will soon be established, upon completion of 165 kilometers of line, the last connecting link that is lacking. Lines covering distances greater than that which separates the federal capital and the city of São Paulo are already in operation, as the one from Ribeirão Preto to Guaratingueta has an extension of 550 kilometers.——During the year 1914–15 the exports of YERBA MATÉ, or Paraguayan tea, from the State of Parana amounted to 48,545,663 kilos, against 44,758,925 kilos exported in the corresponding period for 1913–14, showing an increase for the past year of 3,786,738 kilos, valued at 2,000 contos paper. The export tax alone on last year's crop aggregated 2,185 contos. Capitalists have

recently bought up large tracts of land in Parana for colonization, and an active propaganda is now being made for the purpose of increasing the production and exportation of this commodity.—— The PETROLEUM FIELDS recently discovered near the Pardo River in the State of São Paulo are said to cover a wide area and the oil is of excellent quality.——The recent report of the ministry of agriculture shows great progress is being made in developing the FISHING INDUSTRY. More than 22,000,000 kilos of fish, worth from 2,000 to 3,000 contos, are caught annually in the State of Amazonas. During 1914 the Santos Fish Co. sold more than 800 contos worth of fish in São Paulo and Rio de Janeiro.——According to O Paiz, the States of Rio Grande do Sul and Parana are exporting considerable quantities of LUMBER to Argentina and Uruguay.—— A committee has been appointed by the National School of Fine Arts to make preparations for celebrating the centenary of official instruction in the FINE ARTS, which was inaugurated in Brazil on August 12, 1816.——Due to the great scarcity of coal, a commission has been appointed to study the best means for increasing the development of the important COAL MINES in the States of Rio Grande do Sul, Santa Catharina, and Parana. The Central Railway of Brazil has already adapted most of its locomotives to the exclusive use of oil and wood as fuel and has contracted for 250,000 tons of wood for the present year.——Among the important tariff changes affected by the Brazilian budget law for 1916, which went into effect on January 1, 1916, DRUMMERS' SAMPLES are now admitted free of duty, provided a responsible Brazilian concern furnishes the necessary bond.

CHILE

The department of public works of the Government of Chile has accepted the bid submitted by Ignacio León Palma for the construction in the department of Quillota of the MANCO IRRIGATION CANAL for a consideration of 1,377,000 pesos. This canal will receive its water supply from the Aconcagua River. The contractor agrees to complete the work of construction on or before November 1, 1917, and has deposited 180,000 pesos with the Government as a guarantee for the faithful performance of its part of the contract.——About 10 years ago active steps were taken by the Government of Chile concerning the introduction and propagation of SALMON in a number of the rivers of the country. One of these streams was the Rio Blanco, where a salmon propagation station was established in 1905 and where specimens of this fish have recently been caught,

weighing over 10 pounds. The station which has proved most productive as to the number and size of this highly prized edible fish is the one on the Aconcagua River. The director of fisheries expresses the opinion that this industry will soon be on a commercially paying basis in the Republic. The stations are fitted up in the most modern manner and up to the present time have proved highly successful.——An order has been issued by the Government of Chile requiring ELECTRIC tramway, telephone, light, and power companies whose schedules of charges have not already been approved by the Government to submit same to the President of the Republic for consideration, modification, and approval. After schedules have been established they can not be altered without the consent of the executive power. Companies which violate this law render their concessions liable to forfeiture. In future no electric concessions of the kind mentioned will be granted or extended unless the Government is given a discount of 50 per cent on the regular schedule charges to the general public.——The TRAMWAY company at Santiago proposes to establish in the national capital a completely equipped shop for the manufacture of rolling stock, motors, and other accessories for the use of the line. The shops will give employment to 200 Chilean workmen.——El Mercurio, an important daily paper of Santiago, recommends to the FRUIT AND VEGETABLE growers of Chile the advisability of intensive cultivation of a large area of fruit and garden lands for the purpose of not only supplying the local needs of the country, but with the special object of creating foreign markets for these products, and particularly for fresh fruits which can be placed in the United States in midwinter direct from Chilean gardens.——Reports have been received in Santiago confirming the discovery of valuable deposits of PETROLEUM in the vicinity of Arica.——The Aeronautical Congress, which was held in Santiago from the 9th to the 17th of March last, founded the PAN AMERICAN AERONAUTICAL FEDERATION.——The WIRELESS telegraph station at Frutillar, a small cove on the left bank of Lake Llanquihue, 30 kilometers to the north of Port Varas, has been connected with the land-telegraph system of the Government of Chile. The Frutillar wireless station is in communication with Punta Arenas.——The municipality of Antofagasta has authorized Jeronimo Yankovich to establish an AUTO-OMNIBUS SERVICE in the city of Antofagasta. The vehicles are limited to a speed of 10 kilometers per hour. The tariff rates per trip per passenger are 30 centavos during the day up to 8 p. m. and 40 centavos thereafter.——The Chislluma SULPHUR CO., a Chilean corporation, has been authorized to construct a spur railway at kilometer 175½ of the Arica to La Paz line in order to facilitate the handling of their business.

COSTA RICA

According to data furnished by the Department of Statistics for 1915, Turrialba was the canton and Alajuelita and Puntarenas the cities showing the largest increase in population. The mortality decreased everywhere except in Guanacaste, Cartago, and Puntarenas. Heredia was the province in which the smallest number of deaths occurred. Emigrants to the number of 974 left the country. There were 192 deaths due to accident and only 3 to railway accidents. The excess of exportation over importation was the greatest in the history of the country, being 4,644,043 colones more than in 1914 (colon = $0.465). Coffee was exported to the value of 8,022,166 colones.——The Government has erected a WIRELESS telegraph station on the grounds of the Normal School at Heredia, to be used for practical instruction in connection with courses offered by the school.——The EXPORTS OF GOLD AND SILVER bars in 1915 amounted to 1,599,996 colones.——The BOY SCOUT movement in Costa Rica is making great progress and most of the schools have formed clubs, all over 10 years of age being eligible for membership. It is now proposed to interest the banks of the country in establishing savings departments especially for boy scouts, in which they will be encouraged to deposit even the smallest amounts.——The NEW CATTLE MARKET was inaugurated in San Jose on April 23 with appropriate ceremonies. The old market place will be divided into lots for immediate sale.——A RECORD TRANSACTION was effected during the latter part of April for a coffee plantation at San Juan de Tibas, for which payment was made in one check for 570,000 colones.——Responsible firms in Chile are importing from Costa Rica large quantities of the fiber extracted from the SILK-COTTON TREE and offer to take the entire output of this product.——The fiscal REVENUES of the Government of Costa Rica in 1915 amounted to 6,334,445 colones.——According to the Agricultural and Industrial Board of Limon, an institution established for promoting the development of agriculture and industry in the Province of Limon, great opportunities exist at present along the Atlantic coast of Costa Rica in the TRUCKING INDUSTRY. An agent of the Canal Zone established in Limon purchases weekly more than 5,000 colones worth of vegetables, which amount could be easily increased by a larger output and variety of products. To promote scientific methods in horticulture, the board has imported at considerable cost selected seeds for free distribution among the farmers, has published much literature on the subject, makes free analysis of soils, and seeks a market for products abroad.——A company has

been organized and capital subscribed for the construction of a TOURISTS' HOTEL in San Jose, to meet the demands of the increasing number of tourists now visiting Costa Rica. Every facility for tourists will be furnished and the hotel will be modeled after the best of its kind in Europe and America.——According to La Informacion, the exploitation of PETROLEUM DEPOSITS in Talamanca began on April 16, when drilling on several wells was inaugurated. If oil is discovered in large quantities it will be a powerful factor in promoting the material welfare of the country.—— An important question to be settled by the next Congress will be the establishment of an ALCOHOLIC FACTORY for distilling liquors on a large scale, similar to those now operating in Cuba, which greatly promote the cultivation of sugar cane.——ARBOR DAY was celebrated throughout the Republic on May 1, in accordance with a presidential decree, more than 1,000 trees being set out by school children.——The International Bank of Costa Rica has been authorized to issue BANK NOTES of the denomination of 50 colones, payable to bearer, for the sum of 100,000 colones, to take the place of 20 colones bank notes for a corresponding sum now in circulation.

COLOMBIA

By a special order of the Government of Colombia the SURVEY COMMISSION of the Cucuta to Rio Magdalena River, consisting of a chief engineer, five assistants, and two officials of the general staff of the army in the capacity of military attachés, is divided into two sections of three engineers each, one of which will make the survey via Ocaña to Port Arango, while the other will complete the survey from Ocaña to the Magdalena River. Both surveys must be concluded on or before December 31 of the present year.——Two large LIGHTHOUSES have been erected in the mouths of the Magdalena River, known locally as "Bocas de Ceniza," at the points called "Cayo Alto" and "Cayo Bajo."——The Department of Bolivar has in operation 266 PRIMARY SCHOOLS, with an enrollment of 12,251 pupils.——The SANITARY COMMISSION contracted for by the confidential agent of the Government of Colombia in Panama for the sanitation of Buenaventura and Caldas, arrived at the former place during the latter part of March. The commission, which is under the direction of Dr. Edward P. Beverly, a North American physician, who rendered valuable services in the sanitation works of the Republic of Panama, will confine its activities for the present to the destruction of the germ-infecting yellow fever mosquito. This will be accomplished by a thorough fumigation of all the dwellings in Buenaven-

tura and Caldas, the disinfection of water deposits, cesspools, etc., and the covering of waters of wells and swamps with a thin layer of oil sufficient to destroy the larvæ of all kinds of mosquitoes. Dr. Beverly is assisted in this work by Joseph A. Carrigan, inspector of public health.——The Legislature of the Department of Magdalena has decided to sell to the National Government the interest which that department has in the SANTA MARTA RAILWAY for the sum of $100,000 gold, payable in 10 months, the department to receive 25 per cent of the profits derived from the operation of the line for a period of 25 years.——The work of DREDGING the Cauca River, so necessary for the safe navigation of steamboats, has been commenced and will be carried forward as rapidly as possible until all dangerous obstructions to navigation are removed.——During the last 10 years the number of STUDENTS matriculating in the Department of Caldas has tripled. At the present time there are in that department 40,905 pupils, 483 schools, and 900 teachers.——Under a contract made with the Treasury Department of the Government of Colombia, G. Amsinck & Co., of New York, agrees to buy, for account of Colombia and with funds provided by the Colombian Government, silver bullion in such form and fineness as may be most desirable for the MINTING OF COINS 900 milesimos fine. This coinage will represent 1,000,000 pesos in the denomination of 50 centavos, or a nominal value of 500,000 pesos silver. The consul of Colombia in New York, in cooperation with the aforesaid firm, will arrange for the coinage of this silver bullion at the mint in Philadelphia.——The President has issued a decree providing for the establishment of a PENAL COLONY on the right bank of the Magdalena River, immediately above the point where that stream receives the waters of the Negro River and in the zone traversed by the highway to Alban. The colony will engage in agricultural and industrial pursuits, and it is the intention of the authorities to make it an important factor in the development of that rich section of the Republic.——The press announces that construction work is to be commenced within the next two months on the NORTHEASTERN RAILWAY, which will run from Bogota to Tunja, the capital of the Department of Boyaca. The road will extend to the Magdalena River and will pass entirely through the Department of Santander and terminate at Berrio.——On April 9 last a legislative decree providing for the observance of SUNDAY as a day of rest went into effect in the Department of Atlantico.——A committee has been organized at Ocaña, Department of North Santander, to celebrate on March 5, 1917, the CENTENARY of the birth of the celebrated Colombian poet, statesman, and soldier, José Eusebio Caro. The college building now being erected at that place will be inaugurated on that day, and the historical work entitled "Historical Notes of the City and Province of Ocaña," by Justiniano J. Páez, will be distributed for the first time.——The CUCUTA

RAILWAY transported commerce in 1915 aggregating 13,068,205 kilos of freight, consisting of 2,293,080 kilos of imports and 10,775,125 kilos of exports.——A decree of the Legislature of the Department of Bolivar establishes a MUSEUM OF HISTORICAL ANTIQUITIES in the capital of that department, under the direction of the Academy of History of Cartagena. The museum is empowered to negotiate for the acquirement of historical objects in the hands of private persons.——The Tequendama Review announces that a school entitled "Colombian Institute" has been established at Facatativa, Department of Cundinamarca.——A company has been organized in Cartagena for the installation and exploitation of a TELEPHONE SERVICE between that city, Barranquilla, and other points in the departments of the Atlantic and Bolivar.

CUBA

Dr. Enrique Nuñez, secretary of the board of health, has prepared a decree for issuance by the President of the Republic regulating the imports and sale of HABIT-FORMING DRUGS, the illegal traffic in which has recently caused the closing of a number of drug stores in the federal capital. The decree provides that only lawfully established druggists shall import the following remedies: Opium, morphine, heroin, diorin, peroin, cocain, vocain, trofococain, chucain, estorain, hydrate of chloral, chloroform, sulphuric ether, and cannabis indica. The customs officers of the island at the different ports are required to furnish a detailed statement to the local customs administrator covering each importation of these drugs, and druggists and pharmacists who sell same to consumers must make detailed reports of such transactions to the department of public health.——The city of Habana has granted a concession to Charles T. Henshall and Arthur E. Clarke to construct within the limits of the municipality a HIPPODROME and general athletic and amusement park. The concessionaires intend to complete the hippodrome and have the park ready for use by December of the present year. The plans call for a race track the equal of any now in existence in the world, and it is proposed to make the park as attractive, beautiful, and appropriate for the purposes for which it is to be used as it is within the power of the most expert landscape artists to design.——Preliminary steps have been taken by the mayor of the city of Habana for holding the OLYMPIC GAMES in the Cuban capital in 1920.——Pedro Laborde, a Cuban philanthropist, has given the Sandovenia ASYLUM FOR THE AGED $25,000 to be used in rebuilding and modernizing their edifice, which was constructed in 1886.——The department of agriculture of the Government of Cuba has received, through the Cuban

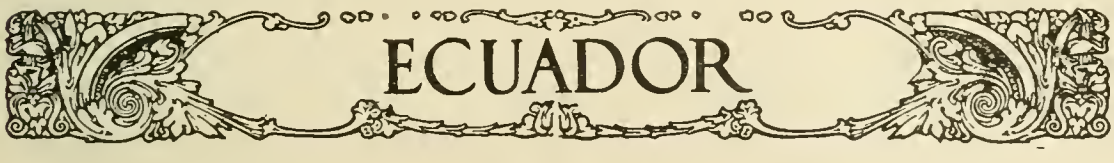
minister at Caracas, a consignment of TONKA BEANS presented by the Government of Venezuela for seed purposes. These beans will be planted at the Government's agronomic station at Santiago de las Vegas and cultivated as an experiment. They are exceedingly fragrant and are used extensively in Cuba in the manufacture of a perfume known as "Heno de Pravia."——José F. Curbelo, chief of the bureau of consular affairs of the Government of Cuba, has been commissioned by President Menocal to proceed to the Canary Islands and Cadiz for the purpose of formulating and studying a plan for a free port arrangement which will enable Cuba to obtain a larger share in the TRADE OF NORTHERN AFRICA.——The President of the Republic recently delivered a message to the Senate requesting an appropriation of $170,000 to be used in the construction of a LEGATION BUILDING in the city of Washington.——The National Association of Producers of Coffee and other tropical products of Cuba has petitioned the Department of State to aid in securing a wider market for Cuban CACAO. The cacao produced on the island averages annually about 50,000 hundredweight.——Dr. Ezequiel de la Rosa has petitioned the department of public works for permission to build an ELECTRIC light and power plant at Meneses, Province of Santa Clara, in accordance with plans attached to the petition.——In 1915 the number of IMMIGRANTS entering the Republic was 32,795, as compared with 25,911 in 1914. The principal nationalities arriving in 1915 were: Spaniards, 24,501; Haitians, 2,453; Jamaicans, 1,834; North Americans, 910; Porto Ricans, 840; Mexicans, 714; Englishmen, 319; and Central Americans, 72.——The Bethlehem Steel Co. has bought the celebrated Daiquiri manganese IRON MINES and the Felton mines in the Baracoa region. The consideration is reported to have been about $32,000,000.——A party headed by the director of the New York Botanical Garden recently visited Cuba and the Isle of Pines and collected 10,000 specimens of the flora of the Republic for the herbarium, museum, and greenhouses of the botanical garden at Bronx Park, New York City.——On May 1, 1915, there were 171 SUGAR CENTRALS grinding in Cuba, as compared with 148 on April 29, 1916. The quantity of cane ground up to May 1, 1915, was 1,754,948 tons, as compared with 2,358,897 tons up to April 29, 1916.

DOMINICAN REPUBLIC

The report of Mr. Clarence H. Baxter, general receiver of Dominican customs, for the year ending December 31, 1915, was submitted on March 22, 1916. The gross collections for the year amounted to $3,882,048, of which duties on imports produced $3,555,225, duties

on exports $231,951, and port charges $94,872. The expenses of the receivership were $153,841, showing a cost of collection of less than 4 per cent. The total FOREIGN COMMERCE for the year amounted to $24,327,575, as compared with $17,317,794 for 1914—an increase of $7,009,781. The imports for 1915 were $9,118,514 and the exports $15,209,061. The share of the United States in Dominican foreign trade was: Of imports, $7,361,259, or 80.73 per cent; of exports, $12,044,271, or 79.19 per cent. Some of the principal imports were: Manufactures of cotton, $1,913,143; of iron and steel, $1,200,810; rice, $908,876; wheat flour, $584,901; meat and dairy products, $541,408; oils, $514,111; and leather and manufactures, $296,799. Among the principal exports were: Cacao, $4,863,754; coffee, $458,431; cattle hides, $185,272; sugar, $7,671,383; leaf tobacco, $972,896; and wax, $113,050. The increase in exports of nearly $5,000,000 ($10,588,787 in 1914 and $15,209,061 in 1915) was due more to advance in prices than to increase in quantities. Thus, of the two principal exports, cacao and sugar, both showing large increases in values, the one (cacao) showed a slight decrease and the other (sugar) only a slight increase in quantities: 1914—Cacao 20,745 tons (metric), value $3,896,489; sugar 101,429 tons (metric), value $4,943,452. 1915—Cacao 20,223 tons (metric), value $4,863,-754; sugar 102,801 tons (metric), value $7,671,383. Metric ton = 1,000 kilos, or 2,204.6 pounds.)——The committees appointed to award the prizes in the LITERARY CONTEST held under the auspices of the Union Club in the city of Santo Domingo, on the occasion of the celebration of the anniversary of national independence, gave gold medals as first prizes for the best productions in poetry, prose, social science, and medical science.——Recent experiments in raising KIDNEY BEANS in the Province of Santiago have met with great success, and the Chamber of Commerce now proposes to order seed from the United States for distribution among the farmers of the Province in the hope of establishing a great export industry in this commodity, as the present trial crop found ready sale at $8.50 per quintal.——To promote more rapid delivery of letters a law has recently been passed authorizing the issuing of SPECIAL DELIVERY STAMPS of the denominations of 5 cents for city letters and 10 cents for points of delivery outside of the city.——A new SUGAR CENTRAL has just been established at Licey, in the Province of Monte Cristi.——The 1915–16 CACAO crop is estimated at 500,000 quintals and will be worth from $5,000,000 to $7,500,000, the price now being from $10 to $15 per quintal.——On April 25 Congress passed a resolution authorizing the expenditure of $40,000 for IRRIGATION WORKS at Bani.——A bill is now before Congress to grant to DOMINICAN WOMEN the same rights in the exercise of the professions as accorded to male citizens.——The Province of San Pedro de Macoris produced 580,735 bags of SUGAR in 1915, 320 pounds

to the bag, and it is estimated that 675,000 bags will be the output for 1916. Its proximity to the capital and the facilities for transportation offered by the Higuamo River have caused an extraordinary development in the commerce of this Province, several millions of dollars being paid annually in salaries alone by its sugar factories.——Due to the great rise in price of CAMPECHE WOOD, large quantities of it are now being exported from the Province of Monte Cristi.——According to press reports, the city council of the municipality of Santiago has contracted for the installation of ELECTRIC-LIGHT SERVICE in Central, Duarte, and Columbus parks.——Work is shortly to begin on a new BRIDGE over the Yaque River at Santiago, which will be constructed in accordance with plans approved by the Department of Public Works.——An organization composed of agriculturists has been formed in the capital for the purpose of promoting GOOD ROADS throughout the Province of Santo Domingo.——A contract for the installation of an AQUEDUCT in San Pedro de Macoris has just been approved by the Chamber of Deputies.—According to El Diario, the Bank of Canada has established a branch at Santiago.——According to the census of 1911, the Province of Santo Domingo has a POPULATION of 123,000 inhabitants, and the city of Santo Domingo, the oldest city in America, a population of 25,000. The municipal authorities have recently contracted for supplying the city with electric-light service.



The municipality of Sucre has passed a resolution offering a 20-year TELEPHONE CONCESSION, free of charge, to the person or company that will install a telephone service in the city and vicinity of Sucre. The concessionaire will be permitted the free use of the streets of the municipality for placing such telephone posts as may be necessary for the use of the wires required by the installation, and is exempted from the payment of municipal duties on the telephone apparatus, accessories, and supplies which may be needed in the establishment and operation of the line. The telephone company will be required, however, to provide three free phones for the use of the offices of the municipality. The city of Sucre is situated in the province of Manabi and has a population of about 8,000 inhabitants.——According to data published by the Gordian Review the production of CACAO in Ecuador during the last four years was as follows: 1912, 33,013 sacks, weighing 80 kilos each; 1913, 39,358 sacks; 1914, 42,333; and 1915, 32,834 sacks.——The municipal commission charged with providing an increase of the POTABLE WATER supply of Guayaquil until J. G. White & Co. are able to comply with the terms of their contract has reported that the water

from the Aguasaira, Palobamba, and Aguapiedra springs, all of which have their sources in the Chongon hill, fulfill the conditions of purity, taste, and clearness required. The water has sufficient fall to make it available for use by gravity pressure, rendering unnecessary the employment of pumps for lifting it to the level of the highest houses of the city. These springs are 16 kilometers (10 miles) from the city of Guayaquil, and have a daily flow of water equal to 2,000,000 liters. The commission proposes to submit a detailed estimate of the cost of bringing this water into the city, and it is quite probable that the municipality will arrange to avail itself temporarily of this water supply.——The consul of Ecuador at Vigo, Spain, has communicated with the department of foreign relations of his Government suggesting the desirability of concluding a postal MONEY-ORDER CONVENTION with that country.——At the close of last March the new HIGHWAY from Villano to Alto Curaray was opened to public traffic, thereby greatly increasing the transportation facilities between the two places.——A new governmental decree makes VACCINATION obligatory in the province of Los Rios.——Aurelio Carrera, Guillermo Higgins Carbó, and Luis Vernaza have been appointed members of the COINAGE COMMISSION in accordance with the provisions of the coinage law.——During the middle of last March the Italian commission which recently visited Ecuador ascended the TUNGURAHUA VOLCANO, and arrived at the edge of the crater which has an elevation of 4,820 meters above the level of the sea. The party was compelled to quickly descend the mountain, since quantities of lava were being thrown out of the crater, rendering it dangerous to remain in its immediate vicinity.—— The National Telephone Co., of Guayaquil, has requested permission of the Municipal Board of Bahia de Caraquez to establish a CENTRAL TELEPHONE OFFICE in that city, charging for service the same rates as those which now obtain in Guayaquil.——The Juan Montalvo committee, which was recently organized in Ambato, proposes to erect a MAUSOLEUM in which to place the ashes of Montalvo, the Ecuadorean patriot.——The newspaper entitled "El Ecuatoriano," of Guayaquil, announces that there has been organized in the city of Panama an ECUADOREAN CHARITABLE SOCIETY for the purpose of attending to the needs of Ecuadorean citizens passing through the Isthmus who may be temporarily embarrassed or in want.——Consul General Frederic W. Goding reports a notable increase in the study of the ENGLISH LANGUAGE in Rocafuerte College, Guayaquil, during the last few years. In 1913 one-third of the 125 pupils enrolled in that institution were studying English; in 1914 one-half, and in 1915 four-fifths. The consul general attributes this increase to the growing trade of Ecuador with English-speaking countries and to the popularity of the American professor of English in the college referred to, who is a graduate of Dartmouth College and an able and efficient instructor.

GUATEMALA

On March 15 last the judges of the SUPREME COURT of Guatemala took the oath of office before the National Legislative Assembly and entered upon the discharge of their important duties. The ceremony was witnessed by the President of the Republic, the members of the cabinet, and other high Government officials.——"El Diario" of Central America, a daily newspaper published in the city of Guatemala, reproduced in a recent edition an engraving of the monument or TRIUMPHAL ARCH which is to be erected in the capital of the Republic to perpetuate the remembrance of the unanimous manner in which the electors of Guatemala cast their votes at the last presidential election in favor of Licentiate Manuel Estrada Cabrera for the presidential term which will commence on March 15, 1917, and expire in 1923.——The President of the Republic, bearing in mind the considerable increase in the expenses of operating the Department of Posts, and realizing that it is necessary to limit the expenditures of this branch of the Government service, in so far as possible, to the receipts derived from same, has just issued a decree increasing the POSTAL RATES for local, domestic, and foreign mail as follows: Local service—for letters or business papers, 12½ centavos for each 15 grams or fraction thereof; printed matter, 2 centavos for each 15 grams or fraction thereof; postal cards, 4 centavos each, and special delivery letters and packages, the ordinary postal plus 1 peso. Domestic service—for each 15 grams or fraction thereof on letters and business papers, 25 centavos; postal cards, 12½ centavos each; parcels and samples, 25 centavos for each 50 grams or fraction thereof; and registered letters and packages, including return receipt, 1 peso plus the regular postage. The domestic service tariff also applies on mail matter going to Central America. Foreign service—letters, 1.50 pesos for the first 20 grams or fraction thereof and 90 centavos for each additional 20 grams or fraction thereof; single postal cards, 60 centavos each; double postal cards, 1.20 pesos each; printed matter, 30 centavos for each 50 grams or fraction thereof; business papers or samples, 30 centavos for each 50 grams, the minimum postage in no case to be less than 60 centavos, and for registration, 3 pesos, including return receipt plus the usual postage. The local and domestic rates go into effect on the 1st of July, while the foreign rates will become operative on the 15th of July, 1916.——The Secretary of Public Instruction has ordered the etsablishment of ENGLISH COURSES in the institutes for boys and girls at Chiquimula.——According to press reports the GOLD PLACERS known as "La Quebrada," situated in the Department of Izabal, have been sold to a foreign company for the sum of $300,000 gold. It is the intention

to work these placers more extensively, using the most modern machinery in their exploitation.——On April 6, 1916, the MUTUAL AID SOCIETY of the carpenters' union was organized in the federal capital. The by-laws of this organization have been prepared and submitted to the national Government for approval.——According to an article republished from a foreign newspaper by the "Diario de Centro America," the Guatemalan COFFEE market at Genoa has awakened considerable interest in Italy. During the latter part of February of the present year Guatemalan coffee was sold at the rate of 180 liras (lira = $0.193) per 100 kilos, the price now being, owing to the scarcity of this article in the Italian market, 200 liras per 100 kilos. The principal difficulty at the present time in placing Guatemalan coffee on the European markets is the lack of transportation facilities and the high cost of freight. The consumption of coffee has considerably increased in Italy during the last 12 months, due largely to the supplying of this article as a ration to the Italian army, and it is thought that the price will substantially increase in the future and will remain high until the close of the European war.

HAITI

The Secretary of Agriculture has appointed a committee composed of the Chief Clerk of that Department and Charles Dehoux and Lucien Chancy, to study, report upon and recommend the rules and regulations which should be adopted for the EXPLOITATION OF FORESTS. This commission also has authority to use for industrial and irrigation purposes all the waters of the Republic, and is charged with preparing laws governing the cutting of timber and the reforesting of denuded woodlands. This same committee will also formulate a law for preventing and combating diseases of domestic animals.——A commission has been appointed by the President of the Republic to prepare a bill for submission to the National Congress providing for the consolidation of the POSTAL AND TELEGRAPHIC branches. The object of the measure is to more efficiently use and develop these important and closely related branches of the government service.——An executive decree of April 5th last established an ADVISORY STATE BOARD, the duty of which will be to state its opinion on bills, decrees, resolutions, and orders submitted to it by the Government, as well as to advise the President of the Republic and cabinet officers concerning matters which these officials may consider advisable to refer to it for consideration. This board shall be composed of 21 members appointed by the President of the Republic. The Board shall elect a chairman and two secretaries to serve for a period of one year, and these

officers are eligible for reelection at the expiration of their respective terms.——A BOARD OF AGRICULTURE of the Commune of Port au Prince has been established in compliance with the provisions of article 103 of the Rural Code. It shall be the duty of this board to see that the laws, rules, and regulations concerning agriculture and the rural police are strictly complied with. The board will also study, report upon, and experiment with the cultivation of vegetables, plants, and fruits, and will take measures to correct and avoid abuses and violations of the provisions of the Rural Code within the territory under its jurisdiction.——With the object of developing the agricultural industry of the country, the Government has undertaken the repair of the IRRIGATION CANALS of the Cul de Sac plain, the work to be under the immediate direction of the Board of Agriculture recently appointed by the Secretary of the Department of Agriculture.——Under the name of the Literary and Amusement Union of Miragoane, a LITERARY AND AMUSEMENT CLUB has been established in that city. The officers of the club are Clovis Coupet, president; Emmanuel Fauché, vice president; and J. Coupet, secretary.——The daily newspaper entitled "La Nouvelliste," of Port au Prince, announces that a syndicate of North American capitalists are at present fitting up a factory for the EXTRACTION OF COTTONSEED OIL. The factory is located in the Artibonite district, the most famous cotton-producing section of the Republic.——An executive decree of April 5, 1916, dissolved the SENATE of the National Congress. The House of Deputies is to be convoked in special session for the sole purpose of treating with the Executive concerning the amendment of the Constitution of October 9, 1889.——In accordance with an order of the Secretary of the Interior, Haitians who desire to leave the Republic must be provided with a PASSPORT issued by that department.——A group of educators engaged in teaching in the intermediate and high school grades of the city of Port au Prince, have opened a GRAMMAR SCHOOL in the federal capital for the purpose of preparing students to enter colleges. The curriculum will include mathematics, physics, chemistry, modern languages, particularly English, and a number of other branches.

HONDURAS

A recent law of the National Congress requires business enterprises, mining companies, planters, railway and industrial companies, commercial firms, agriculturists, contractors, and other employers of labor to pay in HONDURAN COIN on Saturday of each week the wages due to artisans, workmen, and laborers, and forbids the use of

metallic chips, coupons, merchandise, or paper of any kind representing values, under the penalty of a fine of from 25 to 100 pesos for each offense.——The Congress of Honduras has granted a concession to H. U. Wilson, authorizing the free importation of the machinery and materials necessary for the planting, clearing, and operation of COCONUT GROVES on the north coast of the Republic. The concessionaire proposes to extract oil from coconuts and export same to the markets of the United States and Europe.——The National Congress has approved the concession granted by the President of the Republic to P. A. Rodriguez for the installation and exploitation of a SOAP AND CANDLE FACTORY in the city of Choluteca. It is planned to employ a large number of operators and to supply the domestic trade of the south of Honduras with the soap and candles which were formerly imported from Nicaragua.——S. Zemurray, of New Orleans, has petitioned the Government of Honduras for a concession authorizing him to construct and operate in conjunction with the railway of the Cuyamel Fruit Co. a RAILROAD with branches which will run through the Quimistan Valley, Department of Santa Barbara, and will terminate in the city of Santa Rosa, the capital of the Department of Copan. The petitioner requests the exemption of import duties and municipal taxes on the machinery, tools, rolling stock, construction material, and supplies necessary for the building and operation of the line, and asks for the right to make use of such timber and other construction material found on the public lands of the Government as may be required for the construction, equipment, and maintenance of the railway. The concession as formulated is for a period of 50 years.——A decree of the National Congress of March 23, 1916, declares that Pedro Nufio, the distinguished HONDURAN EDUCATOR, deserves the thanks of the nation, and increases to 250 pesos (peso = $0.3537) per month the pension granted him by the Government of Honduras.——The newspaper entitled "Pro Patria," published in La Ceiba, states that the new industries established within the last few years in that progressive maritime city places it at the head of the ports of north Honduras. One of the flourishing INDUSTRIES OF LA CEIBA is the sugar refinery established there last year, which produced sufficient sugar for the consumption of the north coast and which proposes to quintuple its output during the present year. This factory has placed on sale refined sugar in cubes similar to that imported from the United States. At the beginning of last March the sale of whisky, brandy, and other liquors manufactured by the distillery of the said sugar factory successfully competed with the best imported liquors from the United States and Europe. The factory proposes also to manufacture aniseed spirits, gin, and similar liquors. A modern brewery has also been established at La Ceiba and will soon place its beer upon the

market. A soap and candle factory equipped with modern machinery and having a force of trained experts has been established at La Ceiba. This factory is prepared to produce soap and candles equal in quality to the best imported article.——Irving S. Josephs, a North American mining engineer, has solicited a 50-year concession from the Honduran Government for the extraction and refining of PETROLEUM and asphalt found in the Department of Cortes and Atlantida and a part of the Department of Yoro. The concession as presented provides for the free importation of the machinery, tools, and supplies necessary for use in the exploration and operation of the deposits, as well as the authority to use the timber and other material found on Government lands for the construction of its tanks, shops, refineries, dwellings, etc.

The April, 1915, issue of the Boletin Minero (Mining Bulletin) contains an interesting article on the group of MANGANESE MINES at Concepcion Point, Lower California. These mines, which are reported to be the richest known deposits of this element in the world, are situated in the arid hills of a small peninsula, 25 miles long and from five to eight miles wide, between the coasts of the Gulf of Lower California and Concepcion Bay. The Pilares de Gavilan mines consist of 15 claims, the outcropping veins being from 1 to 5 feet thick, and are estimated to contain 1,733,333 tons of pure manganese. The Trinidad mines have ore veins which vary from a few inches to 16 feet in thickness, and the Guadalupe mine has veins of this ore from 5 to 6 feet thick. A spring of potable water exists in the vicinity of the Trinidad mines, and at Guadalupe the water stratum is from 40 to 60 feet below the surface. Near the port of Guaymas, about 90 miles distant, coal mines and petroleum deposits are known to exist, and, in normal times, provisions and other supplies are easily obtainable there, while firewood can be secured in the vicinity of the mines. The soil of some of the valleys in the immediate neighborhood is capable, when irrigated, of producing fine vegetables, and the waters of the Gulf of Lower California abound in edible fish and turtles. Exploitation of these mines could, therefore, be carried on under very favorable conditions.——The National Geologic Institute of the City of Mexico has added a modern CHEMICAL LABORATORY to its equipment for use in analyzing minerals, oils, gases, etc. The chemical library of this institute consists of over 600 select volumes. While this laboratory was established for the use of the members of the institute and for educational purposes, it will, on request, make analyses for the general public, charging

only moderate prices for the same.——A resolution has been issued by the Government of Mexico extending the term for the revalidation of PATENTS AND TRADE-MARKS, issued under the Huerta and Convention Governments, to May 31, 1916.——In April last the rolling stock of the Mexican railways was increased by the addition of 1,000 BOX CARS and a number of passenger coaches, all of which were made in shops located at the City of Mexico, Monterey, Aguascalientes, and a number of other places in the Republic.——The Government of Mexico has issued a decree removing the restrictions on exports of LEATHER AND HIDES. The old export duties on these articles are, in the main, restored, with the exception of the duties on deer and goat skins which, it is reported, are to be reduced.——The DIVORCE LAW recently promulgated allows a dissolution of the matrimonial bonds, three years after the consummation of the same, by the mutual consent of the parties in interest, and permits the remarriage of the divorcees.——Since the beginning of the European war there has been a noticeable trend toward securing from the United States the AUTOMOBILES and automobile supplies used in the Republic. Formerly this trade was largely with France, but with the return of normal conditions it is believed that there will be a large increase in the trade of American-made automobiles and supplies.——The seat of Government of the State of Veracruz has been transferred from the city of Veracruz to Orizaba, a mountain city of the same State noted for the beauty of its surroundings and the healthfulness of its climate.——The towns of Paso del Macho, Atoyac, and Nogales, on the Mexican Railway between Veracruz and the City of Mexico, have arranged for the installation of ELECTRIC light and power plants.——In February last the PETROLEUM shipped to the United States from Tampico, Mexico, amounted to 937,516 barrels, or 191,352 barrels more than during the same month of 1915.

NICARAGUA

The CANAL TREATY, which was ratified by the Chamber of Deputies in Managua on April 11 last by 27 affirmative votes out of 33 deputies present, seems to have had the immediate effect of greatly stimulating the business of the country. A number of important enterprises, which were kept in abeyance pending the final ratification of this treaty, now propose to make further investments in Nicaragua, and a notable revival in mining, agriculture, and industrial undertakings in the Republic is confidently predicted in the near future. ——The NICARAGUA COMMERCIAL and Logging Co. has rebuilt at Prinzapulka the boat formerly known as the *Minor C. Keith,* and

has added it to the commercial fleet of the company under the name of *Marie Kelting.* The vessel is equipped with a 27-horsepower Wolverine engine and will be used as a general utility boat and especially in the Banabana River trade.——The telephone line between Prinzapulka and Rio Grande has been completed with the exception of the joining of the cable across Great River. When this has been finished, direct TELEPHONE communication will have been established between Prinzapulka and Bluefields.——A New Orleans chemist, representing a large financial institution, recently visited the eastern coast of Nicaragua for the purpose of investigating the possibilities of producing ALCOHOL at a low cost in Nicaragua to be used in the manufacture of perfumes and for other industrial purposes.——The CUSTOMS RECEIPTS of the Government of Nicaragua in 1915 were $787,767, as compared with $1,234,633 in 1914.——The new gasoline SLOOP *Lilith* is scheduled to make weekly trips between Bluefields, Pearl Lagoon, and Prinzapulka, carrying passengers, mails, and such freight as may be offered for which there is space accommodations.——Ralph R. Wiggins, a mining and electrical engineer connected with La Luz Mine in the Pis-Pis district, has been employed to make connections for the transmission of power from the ELECTRIC light and power station at Bilikin Falls on the Banabana River to La Luz Mine.——The American of Bluefields states that the senate committee appointed for the consideration of the Atlantic RAILROAD project has submitted a report recommending substantial modifications in the original agreement.——The schooner *Frances Hyde* recently cleared from Bluefields for Philadelphia with a cargo of 550,000 feet of mahogany and cedar LUMBER. The Freiberg Lumber Co. of Cincinnati has purchased a steamer to engage in the lumber trade on the East Coast of the Republic. The Otis Manufacturing Co. of New Orleans loaded, during the latter part of April, two steamers with mahogany and cedar logs from Prinzapulka and Wawa, and has purchased another vessel to be used regularly in the lumber trade between New Orleans and the East Coast.——The Wawa Commercial Co. is building a railway from Waunta into a heavily timbered section of mahogany forest. At the beginning of the present month of May 9 miles of track had been laid, and mahogany and CEDAR logs were being transported to the seaboard for shipment to the United States.——Eighteen barrels of COPPER COIN, representing a value of $8,100, were received by the National Bank at Managua in April last to be placed in circulation throughout the Republic.——The San Antonio sugar plantation at Chichigalpa proposes to operate a FACTORY for the manufacture of liquors similar to those imported from the United States.——Tiribio Tijerino, Governor of the Department of Chinandega, has taken preliminary steps looking to the con-

struction of a TELEPHONE line from the capital of that department into the Republic of Honduras.——A BRONZE BUST of the lamented Nicaraguan poet, Rubén Darío, is to be erected in the plaza of the city of Masaya.

PANAMA.

In 1909 a COCONUT plantation was started on Venado Bay. Since that time, according to the Star and Herald of Panama City, nine coconut estates have been set out in the Republic, the aggregate number of trees exceeding 500,000. Six of these holdings are on the Pacific coast of Panama and three on the Atlantic side. There are two kinds of coconuts grown in the Republic, both of which are of excellent quality. The one best known is that grown on the Atlantic side of the Isthmus in the section known as the San Blas Indian coast. These nuts bring higher prices in the markets of the world than do those of other varieties produced in Jamaica, Trinidad, Porto Rico, and other West Indian countries. Because of this fact this variety of coconut is greatly in demand for seed purposes, and especially in the establishment of new commercial plantations in Jamaica and other West Indian countries. The San Blas nut has been very sucessfully grown at Port San Antonio, Jamaica, which has a humid climate similar to that of the Province of Colon, Panama. Of late years the Choco coconut, which is grown on the Pacific or south coast of Panama, has become very popular on account of its many good qualities, and brings at the present time higher prices in the New York market than the San Blas coconut. De Candolle, the celebrated Swiss botanist, considered Panama to be one of the earliest habitats of the coconut palm, and some authorities claim that the coconut originated there, having been carried to the South Pacific by ocean currents, and from thence to Sumatra and Java, and finally to Ceylon and India.——An exploring party in search of GOLD PLACERS and mines recently sailed up the Congo River in Panama and penetrated the upper tributaries of that stream. Gold was encountered in small quantities near Chiman, and in the neighboring hills and mountain gorges there were many indications of deposits of ore containing the precious metals. According to the reports of these prospectors, there is a rich, undeveloped agricultural section in the region traversed by the upper Congo River and its tributaries. Far in the interior an ivory-nut plantation and a cattle ranch were visited. The country explored is thickly wooded in the lowlands, is well watered and has a good climate, and with adequate transportation facilities would be very desirable for agricultural settlements and colonization purposes.——Fredericks and Lasso have completed the

survey of the ALMIRANTE-BOQUETE HIGHWAY, which is planned to be constructed in two sections, having a total length of 71 miles. The first section of the road, 33 miles long, will run between Almirante and Robalo, the latter place being situated on the west bank of the Chiriqui Lagoon. This section of the road skirts the sea for a considerable distance and passes through fertile lands suitable for the cultivation of bananas, cacao, and other tropical products. The port of Robalo is a natural outlet to the Atlantic for the Province of Chiriqui. The second section of the line follows the Robalo and Cano Rivers to the forty-fifth milestone. The highway then descends into the Culebra River valley, which is an extensive plain over 400 feet above sea level. The Culebra River is followed for a distance of about 6 miles. The road then branches off into the Cilindro River Valley and at the sixty-fifth milestone crosses the central mountain range at an elevation of 5,840 feet, at which point it descends to the coast and terminates at Alto Boquete about 1 kilometer from the railway station of the Chiriqui Railway, which runs to Pedregal on the Pacific coast. The contractors are to be paid in land for the construction of this highway.——The SCHOOL OF ARTS AND CRAFTS in the city of Panama requires that candidates for admission shall be in good health, not under 14 years of age, not less than 1.5 meters (about 5 feet) in height, and shall have completed the fifth grade in the primary schools or pass the required examination showing that they are fitted for entry.

According to the latest report of the company in charge of the collection of the FEDERAL REVENUES, with the exception of customs duties, the tax on salt, the receipts from the sale of guano, and other minor sources of income, the total collections of the Government of Peru in 1915 were 1,426,528 Peruvian pounds (Peruvian pound = $4.8665), or 20,475 Peruvian pounds more than the collections obtained from the same sources during the previous year. The principal items of income in 1915, together with their values, expressed in Peruvian pounds, were as follows: Tobacco, 465,650; alcohol, 383,832; sugar, 95,205; stamps, 27,073; income tax, 31,899; and opium, 17,020.——In view of the fact that the Department of Public Works has rescinded the SUPE WHARF CONTRACT, the President of the Republic has commissioned the company in charge of the collection of the Federal revenues to take over the wharf in accordance with the decree of February 6, 1907.——The President of the Republic, believing that it is desirable to reestablish the free CIRCULATION OF GOLD COIN, has issued a decree authorizing the Treas-

ury Department to buy for coinage purposes gold and foreign bullion after same has been assayed and weighed at the mint, paying for this bullion at the rate of 136½ Peruvian pounds per kilo of fine gold.——The management of the Lima to Ancon railway has issued an order allowing first-class passengers to carry 20 kilos (44 pounds) of BAGGAGE free and second-class passengers 10 kilos (22 pounds).——The athenæum of Cuzco has invited the writers of that place to take part in a LITERARY CONTEST which will be held in the city of Cuzco on July 28, 1916, allowing them to choose any subject of local interest which they desire to select and to submit same in the form of a story, essay, or poem. The work must be delivered to the committee before July 1, next. A committee appointed for the purpose will examine the same and award the prizes.——The mayor of Callao issued during the latter part of March, 1916, an important SANITARY DECREE requiring reports to be made to the board of health by practicing physicians as soon as it is known or suspected that any contagious disease exists in any dwelling in the province and requiring the isolation of the patient or patients, the fumigation of the dwelling, and if the house is infested with rats, measures are to be taken for the extermination of the same.——According to data published by the Engineering and Mining Journal of New York, the production of COPPER in the Republic of Peru in 1915 consisted of 32,410 tons, as compared with 23,647 tons in 1914 and 25,487 tons in 1913.——El Peruano, the official newspaper of Peru, published in Lima, contained in its edition of March 17, 1916, the full Spanish text of the rules and regulations governing the INHERITANCE LAW promulgated by the President of the Republic on the 8th of the said month.——A police decree of March 3 abolishes GAMBLING HOUSES throughout the Republic with the exception of four in Lima, one in Callao, and one in Cerro de Pasco, which are allowed to operate under strict police supervision.——Enrique A. Carrillo, ex-secretary of the legation of Peru in Rio de Janeiro, has been appointed CHARGÉ D'AFFAIRES of the Peruvian Government near the Government of Colombia.——According to data published by the Commercial Review of Lima the total BANK CHECKS in circulation in the Republic at the beginning of March, 1916, amounted to 2,320,189 Peruvian pounds, including the 12,000 Peruvian pounds authorized by the Government for circulation in the city of Iquitos. The gold reserve forming part of the guaranty of these checks amounts to 617,708 Peruvian pounds, or about 26 per cent of the total issue. The following banks participated in the issue of these checks: Bank of Peru and London, 876,039 Peruvian pounds; German Bank, 661,529; Italian Bank, 214,720; Popular Bank, 187,586; International Bank, 95,315; and the Savings Bank, 273,000 Peruvian pounds.——The cultivation of COTTON is being widely extended in the Depart-

ment of Loreto and with marked successes, so that it is predicted that this department will soon be not only one of the principal cotton-producing regions of Peru but one of the greatest of South America.

PARAGUAY

The Bureau of State Railways of the Government of Italy has sent a representative to Paraguay to make a detailed study of the TIMBER of that country, the procedure for acquiring forest lands and the transportation problem, in so far as it concerns timber, sleepers, etc., from Paraguay to Italy. The first step which this representative of the State railways of Italy took in the performance of his commission was a careful examination of the samples of timber and sleepers on exhibition at the rooms of the Board of Trade in Asuncion. These samples, according to press reports, favorably impressed the the Italian railway commissioner as to their quality, durability, and the abundance with which they are to be procured in the Republic. The principal difficulty relating to their purchase and utilization, however, is the cost of transportation which at present is abnormally high. One of the first transactions made by the commissioner was the purchase of a lot of sleepers ready for shipment at Barranqueras. Paraguay quebracho or ironwood is famous the world over for use as sleepers, while Paraguayan cedar is greatly in demand for cabinet work, and especially where a natural scented wood of fine grain and an agreeable fragrance is required.——The new CUSTOMS TARIFF of the Paraguayan Government went into effect on March 1 of the present year.——Vessels plying on the Paraguay and Plate rivers recently raised their FREIGHT RATES 20 per cent.——Dr. José P. Montero, candidate of the Liberal Party for vice president of the Republic, has resigned his position as SECRETARY OF THE INTERIOR in President Schaerer's cabinet, and the Executive has appointed Ernesto Velazquez, Minister of War and Marine, Acting Secretary of the Interior.——Statistics have been compiled showing that the annual consumption of WATERMELONS in Asuncion is, in round numbers, 210,000, valued at 175,000 pesos, currency. Most of these melons come from districts in the immediate vicinity of the federal capital, are of medium size, good quality, and of fine flavor. During the last few years steps have been taken to increase the size of the fruit, improve its keeping qualities, and lengthen the time of the bearing season. These objects are being attained by seed selection, straw mulching, and by planting at intervals of a couple of weeks apart during the first two months of the growing season.——It is estimated that Argentine capitalists hold title to over 5,000 leagues

of land in the PARAGUAYAN CHACO, the present value of which is approximately $15,000,000 gold.——Aureliano Gonzalez has applied to the Government of Paraguay for a private COLONIZATION concession covering 1,000 hectares of land situated near Villa de Rosario. If the concession is granted, the petitioner proposes to clear and cultivate 200 hectares within the first three years, and at least 100 hectares annually thereafter until the whole tract is utilized. Not less than one-third of the colonists are to be Paraguayans, and the land is ultimately to be sold to the colonists.——A group of Paraguayan capitalists and business men represented by W. R. Haywood, of Asuncion, have taken preliminary steps toward the establishment of a fleet of COLD-STORAGE BARGES to ply between Buenos Aires and Asuncion. These vessels will make a specialty of the transportation of meats, perishable fruits, and vegetables. Argentine capitalists are also interested in the undertaking.——According to statistics published by the Argentine Government, the exports of WINE from Argentina to Paraguay in 1915 aggregated 490,000 liters.——The Banco Constructor (Construction Bank) of Asuncion, Paraguay, earned in 1915 the equivalent of 150,300 Argentine pesos (peso = $0.42).

SALVADOR

The President of the Republic of Salvador received officially on March 10, 1916, the SPECIAL COMMISSION which the Government of Costa Rica has sent to all of the Central American countries and which is composed of Julio Acosta, Minister of Foreign Relations, chairman; Joaquín Fernández Montúfar, secretary; and Col. Guillermo Emilio González, military attaché. The remarks which were made by both the President of the Republic of Salvador and the chairman of the Commission were very cordial and expressive of the good will and harmonious relations existing between the Governments of the two Republics at the present time. A special banquet was given the Commission by President and Mrs Meléndez at the executive mansion in the city of San Salvador on March 18.——On December 31, 1915, according to data published in the Diario de Occidente of March 21 last, the PUBLIC DEBT of that country aggregates 27,560,288 pesos.——The National Legislative Assembly has just promulgated a law modifying that of May 17, 1912, concerning the COAT OF ARMS and the national flag of the Republic and prescribing the use of same.——The Secretary of the Treasury in his last report on the three banks of issue at present doing business in the Republic states that the money in bank notes and coin is 12,047,951 pesos (peso = $0.3537), a small amount when it is taken into account

that there are included in same 3,239,549 pesos in coin stored in the vaults of the three banks referred to, and which must be deducted from the nominal amount in circulation. Steps have, therefore, been taken to increase the CIRCULATING MEDIUM of the country by means of the establishment of a new bank with a large capital, or by increasing the capital of the three banks referred to in the minimum proportion of £300,000 for the Occidental Bank; 5,000,000 pesos silver for the Bank of Salvador and 2,000,000 pesos silver for the Agricultural and Commercial Bank.——On March 1, 1916, the CART ROAD which leads to Lake Coatepeque in the western part of the Republic was opened to traffic.——The National Government has approved the establishment of a new HOSPITAL at Berlin, in the Department of Usulután, under the name of Luis Alonso Barahona Sanitarium.——The press of Salvador announces that at the close of February of the present year there were discovered on the Suntulín plantation, rich gold and magnetic iron MINES at a short distance from El Potosí mineral district and in the neighborhood of San Sebastián and El Divisadero mines. Experts who have examined these mines state that the veins bearing gold ore are wide and well defined, extend from north to south, and are believed to contain as rich gold-producing ores as any in Central America. The iron mine consists of a large vein running from east to west which can be traced for about a league. Both the gold and the iron ores out crop at the surface and can be easily mined at a comparatively small cost.——The National Legislative Assembly recently approved the agreement made by the Consul-General of Salvador in Great Britain with the London and South American Investment and Trust Co., of the English metropolis. The agreement amplifies that of May 19, 1908, and provides for the suspension of the payment of interest and the amortization of bonds due after the six-months period terminating on May 15, 1915. The suspension of payment includes coupons up to those which will fall due on August 15, 1919. The interest due or which will become due during that period will be paid semiannually on the 15th of August and the 15th of February. In addition to this interest there will be paid, as heretofore, £505 every six months plus the English tax on same, which in no case shall be reckoned at more than 2s. 6d. per pound sterling, and £257 for stamp taxes. During this time, and up to August 15, 1919, only the interest on the 7 per cent bonds—that is to say, the interest on interest due—shall be paid. On February 15, 1920, the Government agrees to again commence payments of the same amounts as formerly—that is to say, £43,005—to be applied as follows: (*a*) To the payment of interest on the 7 per cent bonds; (*b*) to the payment of the 1908 6 per cent bonds; (*c*) to the amortization of the converted bonds (those which bear 7 per cent interest), either by purchase or lot, according to the terms of the agreement. After the amortization of the 7 per cent bonds the

amounts intended for the payment of said debts shall be used to liquidate first the interest on the 1908 6 per cent bonds, and any surplus remaining shall be applied to the payment of said bonds. The decree approving the agreement referred to became operative on March 20 last.——The newspaper entitled El Diario del Salvador announces that about the middle of March of the present year the SCENIC CURTAIN of Colon Theater arrived in the federal capital. This curtain, which is a work of great merit, was painted by a Salvadorean artist and represents a panoramic view of Lake Ilopango and vicinity.

URUGUAY

The administration has presented a bill to the National Congress covering the IRRIGATION PROBLEMS of the Republic. This measure declares that, for the purpose of constructing irrigation works or the utilization of navigable or nonnavigable streams for the production of electric power, all the hydraulic forces not now in use in the country are the property of the State. The bill provides that owners of irrigable lands who refuse to irrigate same must dispose of them to the State, if the Government so desires, at their assessed value before the irrigation project is commenced, plus a bonus of 40 per cent. Such lands taken over by the State are to be subdivided and used for colonization purposes, agronomic stations, or for resale in lots of not less than 50 hectares. The bill authorizes the executive to issue 6 per cent annual interest-bearing bonds to the amount of 1,500,000 pesos (peso = $1.0342), the proceeds of which are to be used in defraying the expenses of irrigation projects, as well as an additional sum of 200,000 pesos annually from the general revenues of the Government.——The FIRST NATIONAL WHEAT EXPOSITION held in Uruguay was opened to the public at Canelones on March 5, 1916, in the presence of President Feliciano Viera. The Minister of Industries stated on that occasion that the wheat production of Uruguay from 1898 to 1915 has been practically stationary, the yearly average output having been, approximately, 200,000 metric tons (metric ton = 1,000 kilos, or 2,205 pounds). The production of Uruguayan wheat in 1916 is estimated in round numbers at 300,000 metric tons, the increased output of the present year being largely due to the excellent quality of seed wheat collected and distributed by the Seed Commission of the Uruguayan Government. In 1915 the distribution of seed wheat by the Government of Uruguay amounted to 1,200 metric tons, as compared with 411 metric tons in 1914 and 450 in 1913. The exposition had over 2,000 exhibits of wheat grown in different sections of the country. The grand prize, consisting of 150 pesos voted by the

Senate and a gold medal from the National Commission of Rural Development, was awarded to the Pedro Pirelli exhibit of unbearded wheat (trigo pelon) grown in the Department of Florida.——A SCHOOL FOR ELECTRICIANS was established in Montevideo on April 1 last at the electric light and power plant of the Uruguayan Government. The course covers a period of two years and includes the study of electricity, mechanics, mathematics, and drawing. The classes will be in charge of the following electric engineers: Gilberto Lasnier, Armando Regusci, Juan Alonso, José María Aguerre, and David Santini.——Dr. Salgado has introduced a bill into Congress creating an INSTITUTE OF LABOR consisting of 34 members, either male or female, 18 of whom are to be appointed by the President, 8 selected by employers, and 8 elected by workingmen, to cooperate with the administrative and legislative departments of the Government in the preparation, enactment, and enforcement of labor laws in such a manner as to encourage the welfare and betterment of the working classes.——Dr. Gabriel Terra has introduced a bill into the lower house of the National Congress authorizing the BANK OF THE REPUBLIC to establish branches in Washington, D. C., and Rio Grande, Brazil.——The Ulen Contracting Co., an American corporation, which has been engaged by the Uruguayan Government to sanitate Salto, Paysandu, and Mercedes, began work early in April last. T. J. Sheppard, an American engineer, is in charge of the undertaking.——The FOREIGN COMMERCE of Uruguay in 1915 consisted of imports, 34,976,639 pesos, and exports, 73,290,671 pesos.

VENEZUELA

According to data published by the daily newspaper, El Universal, of Caracas, José I. Briceño established some time ago a farm in San Fernando de Apure, devoted entirely to the raising of HERONS, from which the beautiful aigret plumes, so highly prized in commerce, are obtained. The undertaking proved to be both practical and profitable and the result has been the extension of the industry. Mr. Briceño states that these farms can be successfully operated anywhere where the proper climatic conditions exist, providing the necessary lakes, lagoons, or ponds, either natural or artificial, are available. The birds breed and multiply in captivity if their conditions of life approach those of a state of nature, much in the same manner as the ordinary domestic fowl. They shed their feathers twice a year, and the fact that they are in captivity and have a limited area over which to roam, greatly facilitates the collection of the plumes and reduces to a minimum the cost of obtaining same. The plumes of the domesticated heron are reported by Mr. Briceño to be more perfect, beautiful, and clean than the feathers found in the

underbrush and briar patches frequented by the wild herons. In 1915 there were 60 herons on Mr. Briceño's farm and the plumes gathered weighed 450 grams. It would seem, therefore, that this is an industry capable of great development and large returns in the Republic of Venezuela.——The National Government has rented to Guillermo Pimentel, of Caracas, for 25 years, the asphalt, petroleum, naphtha, and similar deposits found in the Republic within the following limits: To the north, the Caribbean Sea; to the east, the port of Borburata; to the south, the Puerto Cabello road to Borburata; and to the east, the eastern boundary of the city of Puerto Cabello. The lessee agrees to begin to work these deposits within the next three years, and work once begun on same must not be suspended for more than three years except in the case of unavoidable circumstances legally proved. The concessionaire must pay for each ton of asphalt, petroleum, naphtha, mineral tar and similar substances which he exploits in their crude state, 3 bolivares (1 bolivar = $0.193) each, and for each hectare included in the concession, 2 bolivares annually. The lessee has the right to import free of duty machinery and other articles mentioned in article 92 of the Mining Code. The contract referred to can not be signed without the approval of the President of the Republic.——A lease, under conditions similar to those mentioned in the foregoing, has been made by the Government of Venezuela to Arístides Soto, of Maracaibo, for the exploitation of four COAL MINES, called, respectively, Manto Limón, Manto Gavilancito, Cien Vetas, and Vetas Ricas, consisting of 200 hectares of land each, and the Rio de Oro petroleum mine, located on Government land in the municipality of Jají, Camp Elias District, State of Mérida. The lease is for 27 years, and the contractor agrees to pay two bolivares for each ton of coal extracted.——The general manager of the Maracaibo Tramway Co. inaugurated an ELECTRIC TRAM SERVICE in that city on the 27th of March, 1915.——At a meeting held in the lecture hall of the National Academy of Medicine at Caracas on April 5, 1916, for the purpose of electing the VENEZUELAN COMMISSION to the First Congress of American Children to be held in Buenos Aires, Argentine Republic, in July, 1916, the following delegates were chosen: Dr. Alfredo Machado, president; Dr. Agustín Aveledo and Dr. Francisco A. Risquez, vice presidents; Dr. J. de D. Villegas Ruiz, secretary; Guillermo Todd, assistant secretary; Dr. Emilio Ochoa, treasurer; and Virgilio González Lugo, assistant treasurer.——The National Government has commissioned Dr. Ciro Vásquez to install the government's weather bureaus in the cities of Bolivar and Calabozo, established under an executive decree of March 14, 1913.——On March 10, 1916, there was celebrated at La Guaira, with appropriate ceremonies, the one hundred and third ANNIVERSARY of the birth of the Venezuelan patriot and writer, Dr. José Vargas, a native of La Guaira and a celebrated Venezuelan physician.

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BULLETIN OF THE PAN AMERICAN UNION

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Office of Legation, 1737 H Street, Washington, D. C.

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[1] Absent.

Photo by Harris-Ewing.

PRESIDENT WILSON SIGNING THE SAN ANTONIO, TEX. BICENTENNIAL AND PAN AMERICAN EXPOSITION BILL, JUNE 5, 1916.

In the presence of the United States Senators from Texas Charles A. Culberson (extreme left) and Morris Sheppard (extreme right), Congressman John N. Garner (in light suit), and Leo R. Sack, Washington representative of the exposition, President Woodrow Wilson signed the bill, passed by the United States Congress, authorizing him to extend invitations to the countries of Central and South America and to Spain to participate in the bicentennial and Pan American Exposition which will be held in San Antonio, Tex., in 1918. The preliminary organization of the exposition has already been completed and plans are rapidly being perfected to make this a truly representative exhibition of the industrial, agricultural, and mineral development of the American Continent.

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NOTABLE EXPRESSIONS BY MEMBERS OF THE INTERNATIONAL HIGH COMMISSION ON UNIFORM LEGISLATION.

DURING the recent Conference of the International High Commission on Uniform Legislation, held in Buenos Aires last April, there were made many notable addresses by the eminent men who attended the conference as representatives of the various Governments of the Americas. To reproduce even a part of all of these is, of course, impracticable, but a few of the most striking expressions dealing with some of the important matters brought up for discussion are given in the following paragraphs. In regard to the necessity of providing a merchant marine for purposes of communication and transportation between the countries of the Western Hemisphere the Secretary of the United States Treasury, Hon. William G. McAdoo, said in part:

There is no problem confronting the American States to-day of such pressing and paramount importance to their interests as this problem of a merchant marine. Their trade and prosperity are seriously menaced already by the effects of the past two years. It is not merely an emergency problem; it is a fundamental question of the future development of the American States, and it rests upon the ability of these States to communicate with each other. You can not trade with each other unless you can communicate with each other, and you can not communicate with each other unless you have facilities for communication. Since the outbreak of the European war there has been a gradual withdrawal of European ships from the American service. That is a perfectly natural operation, because where Governments are involved in a colossal conflict and their vital interests are at stake, they must of necessity use every legitimate power they have for the conservation of their own interests. If, in order to protect their interests, they withdraw ships of their registry from service between the American States and put these ships into service of their own, whether it be of a military or naval or other character, we can not complain, so long as due regard is had for the accepted rules of international law. Our only complaint, in that case, must be against our own lack of foresight in not having made provision for just this kind of a situation. It is not possible to meet the immediate emergency confronting us, because the markets of the world have been swept by the farsighted capitalists who, knowing the opportunity for profit, have bought up every available ship and are to-day using them in their own service and are making so much money that they could not be induced to part with them.

While it will be difficult, therefore, to meet the pressing emergency of the moment, we should do something, and at the same time we should enter upon a policy—a

sound economic policy—which will forever free the American States from dependence upon the flags of foreign powers for the protection of their own commerce and the protection of their own physical safety. That can not be done unless the States themselves make a determined effort to solve this problem. I myself favor private initiative in these enterprises. I believe thoroughly in giving private capital the opportunity to render this service, but private capital has not come forward to do so, and as a consequence we must resort to the only other agencies at our command. These are the agencies of government.

In the course of his address on "Progress in the Development of Banking Relations between American Countries" Hon. Paul M. Warburg, member of the United States Federal Reserve Board, and one of the members of the United States section of the High Commission, said:

Our merchants and manufacturers realize that after the end of the war Europe will have to make gigantic efforts to regain her lost ground and that the United States must be prepared to feel this competition even within her own borders. It is therefore necessary for the United States to look for new markets for her products, and this naturally will lead our business men to increase their efforts in gaining a strong foothold in Central and South American countries. Some of our large interests have already become important factors in this direction, but if the growth is to be solid, it must be gradual, as was Europe's progress. After all, not a few large transactions, but the thousands of individual ones form the best basis for the permanent establishment of extensive business relations between nations.

The financial condition of the United States after the war will be such as to make it an absolute necessity for us to take a very important share in financing the world. There is no intention on our part to endeavor to crowd out the European nations that have been the friends of the South and Central American countries and have been substantial in developing them, as indeed they have been substantial in developing our own country. But the figures that I had the honor of presenting to you in the first part of my remarks tell conclusively their own incontrovertible story.

It is not any more a question of hopes and wishes, but a question of mathematical certainties. And it does not now, as it did a year ago, take any degree of bold prophesy to foretell what the outcome must be. The United States now is and from now on will be one of the world bankers. I believe I am voicing the unanimous wish of all American nations if I say that we fervently hope for an early cessation of hostilities; the sooner they cease the better for us all. For the longer the war the greater the destruction of the world's saving power and the greater the resulting retardation of the entire world's economic progress. We do not wish Europe's financial power to be crippled and ours to grow at their expense. The world is too large to be financed by any single nation. For the American nations' safety and independence lies in dividing their risks both as creditors and debtors. In any emergency that will assure them the best protection. It is to this goal that we are moving with consistency and determination.

In regard to the highly important matter of "Arbitration of Commercial Disputes," Hon. John H. Fahey, former president of the Chamber of Commerce of the United States, gave the following explanation of the code of procedure adopted by the representatives of Argentina and the United States:

The code agreed upon is comparatively simple. It is first provided that the Chamber of Commerce of Buenos Aires, representing the business men of Argentina, and the Chamber of Commerce of the United States, in like manner representing those of our

U. S. S. TENNESSEE PASSING THROUGH THE PANAMA CANAL.

The United States members of the International High Commission on Uniform Legislation who attended the conference held at Buenos Aires last April made the journey on the United States armored cruiser *Tennessee*. Leaving the party at the Argentine capital, the vessel proceeded to Valparaiso, Chile, via the Strait of Magellan. Upon the conclusion of the conference the United States members crossed the continent by rail and rejoined the ship at the Chilean port, proceeding thence up the west coast and stopping at several ports en route to Panama. The picture shows the *Tennessee* passing through the lower Miraflores Lock on April 27, 1916.

country, shall do all in their power to influence and encourage the employment of arbitration in business questions arising between the merchants of those countries.

Permanent agreements may be entered into between business men of the two countries under which disputes shall be settled in accordance with the plan devised by the two chambers and a specific transaction closed by cable may be settled in the same manner in case of difficulty, by the incorporation in the cable exchanges of a code word having reference to the agreements and providing for arbitration.

Under the terms of the understanding, the Chamber of Commerce of Buenos Aires binds itself to maintain a committee of arbitration of five members resident in Argentina, three of whom are named by the Buenos Aires Chamber and approved by the Chamber of Commerce of the United States, and two of whom are named by the Chamber of Commerce of the United States and approved by the Buenos Aires organization. The Chamber of Commerce of the United States in turn maintains a similar committee in the United States selected in like fashion. These committees have charge of all arbitrations conducted in either country.

In Argentina there is established a permanent list of 30 representatives and responsible gentlemen representing different lines of business who may act as arbitrators. Fifteen of these are selected by the Chamber of Commerce of Buenos Aires and approved by the Chamber of Commerce of the United States. A like number is nominated by the Chamber of Commerce of the United States and approved by the Buenos Aires Chamber. In the United States a similar arbitration board is chosen under exactly the same conditions. In the event of a dispute between our business men, if they do not agree between themselves on three arbitrators to settle the question arising, then the committee on arbitration maintained in the country where the arbitration is to take place selects three arbitrators from the regular list of 30 resident in that country. The arbitration committee being appointed, the trial of the case proceeds under a carefully drawn set of rules providing for all contingencies it has been possible for our joint committee to forecast.

Rules are also set forth for the sale of merchandise under the direction of the committee on arbitration where there is danger of loss arising from failure to promptly dispose of the merchandise, or the accumulation of charges if goods ordered are not accepted.

"Uniformity of Customs Regulations and Classification of Merchandise" was the subject of one of the ablest addresses presented to the conference. Hon. Andrew J. Peters, Assistant Secretary of the United States Treasury, dealt with this complex subject from three broad points of view, viz, (*a*) the technical and, usually, purely administrative side, including the subheadings of documentary and certification requirements; (*b*) the revenue problem, and the scientific manner of adjusting it to commercial needs; and (*c*) the relation of the public health to the fiscal administration, and its respective regulations. Each of these phases of the subject was clearly analyzed, suggestions as to practical methods for obtaining uniformity in customs regulations, of classification, and of statistics were made, and valuable suggestions advanced as to the elimination of some of the cumbersome and unnecessary details of customs regulations in various countries that are unnecessarily restrictive and only offer impediments to international commerce. In concluding his address Mr. Peters said:

The fiscal administration is called upon to do more than attend to the prompt, accurate, and inexpensive dispatch of the *public* business; its duty does not end with

the collection of the revenues required by the lawmaking power. It is bound in addition to facilitate *private* business—to accommodate its own regulations to the current and necessities, to the habits and requirements of private trade. It is bound, moreover, to keep vigilant watch over the public health, and to protect its community from the carelessness or disregard of others by the exercise of its wide powers of examination. We are learning evermore effectively how great is the obligation of the governing agency really and materially to facilitate the commerce and industry of those whom it represents. This movement, which has so frequently attracted our attention in recent years, ought to give us renewed encouragement to accomplish the specific work before us. Literal identity we do not need, nor should we strive for, but the removal of unreasonable, antiquated, and positive obstacles to trade is our common object, and our first step will be the substantial unification of customs regulations and procedure.

The conference concluded its labors on April 12, and an elaborate banquet was tendered the visiting delegates by the Argentine minister of foreign affairs, Sr. Dr. José Luis Murature. Upon this occasion the minister, in bidding farewell to the guests of the Argentine nation, spoke eloquently of the prevailing spirit of Pan Americanism which, he said, was a reasoned formula and was the result in this continent of outside and artificial forces. Historic evolution with its inflexible logic had marked the successive gradations. To-day they were concerting plans that their work might be harmonious, solid, and handsome. Destiny had conferred on this continent the means to fulfill a noble and grand mission. He recalled the fearful European convulsion and the dreadful price paid for the great conquests of human progress. To Europe they owed their patrimony of culture in thought and action, and they could not behold such fearful pains afflicting the fruitful mother of western civilization without asking if they did not indicate the sundering but fecund force of a new era of enlightenment. The soil of America is propitious soil for development of justice and liberty to all men who wished to live there. He further predicted that the Utopia of yesterday would be the reality of to-morrow.

United States Senator Duncan U. Fletcher, of Florida, responded on behalf of the delegates in an eloquent and thoughtful speech, in which he referred to the progress and future development of the Argentine nation in glowing terms. In regard to the development of Pan American commerce he spoke in part as follows:

> The sturdy descendants of the daring pioneers who marked out the routes of trade running east and west will now shift those lines to north and south. Old commercial ties have been severed and new ones are forming. The hour has arrived for extending and cementing those ties in terms of equality and honor.
>
> In order to reach your full development many of your valuable products must find foreign markets. We, in the other American Republics, have a growing surplus of manufactured commodities and of products of fields and mines. It is so simple I hesitate to mention that if we can pay for each other's products with our own it is a sensible thing to do on the part of all. That is trade, and if the settling of differences can be made in dollars this trade will be facilitated. To establish and extend that trade to its full limits there must be adequate means of transportation. It stands to reason such means should be under our control. With only inadequate means, or with uncertain

and antagonistic means, commerce between us must halt and limp. * * * It is quite true that ancient characteristics of commerce have disappeared, and instead of aggression commerce has come to mean the promotion of peace. What we require, then, and I need not press it after the views expressed in the sessions of the International High Commission, is a permanent moving bridge between the countries of Pan America; that is, vessels sufficient to properly take care of our overseas trade.

THE TOUR OF THE DISTINGUISHED MEDICAL AUTHORITIES.

The forthcoming visit of Surg. Gen. Gorgas, of the United States Army, and other distinguished authorities on public health and sanitation to South American countries will be another advanced step toward the intimate study and possible eradication of tropical diseases.

The party will sail from New York aboard the S. S. *Almirante* on June 14 and proceed directly to Cartagena, Colombia, where the vessel is due July 23. Several days will be spent in visiting and inspecting places in that vicinity, and then the party will go to Panama. The following itinerary has been arranged; slight modifications may be necessary from time to time to meet local conditions:

June 14. Leave New York by S. S. *Almirante.*
June 23. Arrive Cartagena.
July 1. Leave Cartagena by S. S. *Zacopa.*
July 6. Arrive Cristobal.
July 10. Leave Panama by Peruvian Line S. S. *Huallaga.*
July 13. Due Guayaquil.
July 20. Leave Guayaquil by Peruvian Line S. S. *Urubamba.*
July 24. Arrive Callao.
July 26. Leave Callao by Chilean Line S. S. *Limari.*
Aug. 2. Due Valparaiso.
Aug. 7. To Los Andes.
Aug. 8. Leave Los Andes by Trans-Andine Railway.
Aug. 9. Arrive Buenos Aires in the evening.
Aug. 15. Leave Buenos Aires or Montevideo by steamer of Lamport & Holt, Pacific Steam, or Royal Mail Lines. (Date approximate.)
Aug. 21. Due to arrive Rio de Janeiro.
Aug. 28. Leave Rio de Janeiro by local steamer of Lloyd Brazileiro Co.
Sept. 1. Arrive Bahia.
Sept. 4. Leave Bahia.
Sept. 6. Due Pernambuco.
Sept. 9. Leave Pernambuco.
Sept. 14. Due Para, from which city the travelers will proceed up the Amazon River.

From a medical point of view the trip up the Amazon and the possibilities that may open to the commercial world after the river ports are made more healthful will be a special feature of the tour. Iquitos is situated about 2,500 miles up the river and has a population of approximately 12,000 people. This little city has been undergoing a sanitary cleaning up, and the methods employed and other details of the work will doubtless prove of interest to the United States medical authorities. Various other river ports will be visited,

including Manaos, the Brazilian city 1,000 miles up the Amazon, which in recent years has been greatly modernized and improved. Its population is now 50,000 people.

After the Amazon trip the party will return to New York, making stops en route at several ports in the West Indies. Probably about four months will be required to visit the countries and places named in the itinerary.

The members of the official party will consist of Gen. and Mrs. William C. Gorgas, Majs. Eugene R. Whitmore and Theo. C. Lyster, of the Army; Drs. H. R. Carter and W. D. Wrightson, of the Public Health Service; and Dr. John Guiterez, chief health officer of Cuba.

WIDESPREAD INTEREST IN PAN AMERICAN SUBJECTS.

Positive evidence that the interest in Latin America is widespread is found in the large number of invitations constantly coming to the Director General to discuss subjects having to do with Pan American commerce, the Latin-American countries, their history, geography, literature, education, progress, etc. These come from every section of the United States and, to some extent, from foreign lands. Their sources include chambers of commerce, boards of trade, and other commercial organizations, universities, colleges, academies, and high schools, civic and social societies, women's clubs, and almost every form of organization that is interested in public questions. If the Director General accepted even a small percentage of these he would be required to be absent from Washington nearly all the time. As it is, he accepts only those where it is evident that the interest in the subject is very great and a real work of education can be done.

In considering the good to be accomplished by these addresses, the Director General bears in mind that whereas not one busy man or woman in a thousand would take the time to read a long communication or a book relating to Latin America, hundreds of them, assembled on some special occasion, will listen attentively one or two hours to a review of facts on these subjects. Take, for example, a recent experience. The Director General was the guest of honor of the Illinois State Bar Association at one of its notable dinners in Chicago. Here were assembled several hundred of the leading and busiest judges and lawyers of that great city and State. They complimented the guest by listening for nearly two hours to his discussion of the progress and development of the Latin-American countries and the history of the Monroe Doctrine in its Pan American phases. Had he, on the other hand, undertaken to have written each one of those present a letter which would have covered one-twentieth of the ground of his speech, or if he had sent them some representative book on the subject, it is not probable that one in a score of them would have taken the time to have carefully studied the contents of

A BRAZILIAN STATESMAN, DIPLOMATIST, AND LECTURER.

Dr. Manoel de Oleveira Lima, who recently returned to his home in Pernambuco, Brazil, was Harvard University's first exchange professor from South America. One of the foremost statesmen and diplomatists of his country, he was born in Pernambuco in 1866 and graduated at Lisbon, Portugal, in 1886. He has been successively attaché to the Brazilian embassies at Berlin, Washington, and London, and minister to Japan, Sweden, and Belgium. He is a member of the Brazilian Academy of the Royal Society of Literature (England), the Historical Institute of Rio de Janeiro, and was decorated by the King of Portugal with the Order of Santiago for his literary work in the Portuguese language. During his stay at Harvard he delivered a course of lectures on the economic histories of the countries of South America. Before his departure he was tendered an elaborate banquet by the Fall River Chamber of Commerce, upon which occasion he delivered a notable address on the Monroe Doctrine. In the lower picture the eminent lecturer is shown near the center of the group of distinguished Portuguese-American citizens of Fall River, Mass., who gave a farewell dinner in his honor.

such letter or book, and yet on a special occasion like this dinner they would give up two hours of their valuable time to his address and go away with a knowledge of the subject which otherwise they might never have obtained.

Looking back over the past few months, some of the other organizations or institutions addressed by the Director General, in response to their invitations, include: The Friday Evening Club, Utica, N. Y.; the Lawyer's Club, Buffalo, N. Y.; the Men's Forum, Binghamton, N. Y.; Brown University, Providence, R. I.; Worcester Academy, Worcester, Mass.; the Knife and Fork Club, South Bend, Ind.; the Federation of Women's Clubs, Montgomery, Ala.; the National Association of Real Estate Exchanges, New Orleans, La.; the University Club, Chicago, Ill.; the Cincinnati Association of Credit Men, Cincinnati, Ohio; Daughters of the American Revolution, Washington, D. C.; the Southern New England Textile Manufacturers' Association, Worcester, Mass.; the students of Smith College, Northampton, Mass.; the Chamber of Commerce, Bridgeport, Conn.; Trinity College, Washington, D. C.; the University of Illinois, Urbana, Ill.; the Illinois Grain Dealers' Association, Decatur, Ill.; the New Jersey State Federation of Women's Clubs, Asbury Park, N. J.; the Harvard Club, New York City; the Chamber of Commerce, Wilkes-Barre, Pa.; the Manufacturers' Association, Lancaster, Pa.; the Young Men's Christian Association, Philadelphia, Pa.; the Missouri State Bankers' Association, St. Louis, Mo.; the National Service School, Chevy Chase, Md.; Davidson College, Davidson, N. C.; and the Chamber of Commerce, Charlotte, N. C.

CONFERENCE ON INTERNATIONAL RELATIONS.

An important conference is to be held at Western Reserve University, Cleveland, Ohio, from June 21 to July 1, 1916. Its purpose is to consider the international relations of the United States, to familiarize the participating students with some of the vital subjects connected therewith, and to assist in the creation of an enlightened public opinion concerning such relations. Among the topics to be discussed by United States officials and other experts are Pan Americanism in its broad sense and with special consideration thereof as a lesson to the world; the American policy in regard to Mexico; the Monroe doctrine and Pan Americanism; and the United States in the Caribbean. "World organization after the war," "America's Oriental policy," and "The International Point of View" are the main heads of the divisions of other subjects scheduled for study and discussion. Detailed information in regard to program, speakers, and the arrangements for the conference may be obtained from the Federation of International Polity Clubs, No. 40 Mount Vernon Street, Boston, Mass.

Photo by Fernando Lund, Lima, Peru.

FINANCIAL AND COMMERCIAL COMMITTEE VISITING PERU.

Reproduction of photograph taken in the palace of the minister of foreign affairs of Peru at Lima. The purposes of this committee, appointed to return the visit of the delegates from Peru, Bolivia, and Chile to the financial conference held in May, 1915, at Washington, were outlined in the April number of the BULLETIN. Reading from left to right the gentlemen in the picture are Mr. Montavon, commercial attaché of the United States to Peru and Bolivia; Mr. E. H. Wands, of the American International Corporation, chairman of the visiting committee; Mr. A. W. McLellan, president of the Alden Mills Corporation (in rear); Mr. O. M. Clark, president of the Clark & Wilson Lumber Co., of Portland, Oreg.; Mr. Cisneros, official introducer of the Government of Peru; and Hon. Benton McMillin, United States minister to Peru.

CLOSING AN IMPORTANT CONTRACT FOR SANITATION WORKS IN URUGUAY.

The photograph of which the above picture is a reproduction was taken upon the occasion when the contract between the Government of Uruguay and the Ulen Construction Co., of Chicago, Ill., was signed by the parties in interest. This work embraces the construction of waterworks and modern sewer systems for three important cities of Uruguay, viz, Salto, Paysandu, and Mercedes. The total cost of the work will be about $5,000,000. The names of the gentlemen appearing in the picture are, from left to right, Mr. C. W. Bownell, attorney for the Ulen Co.; Dr. Pedro Cosío, Minister of Finance of Uruguay; Dr. Baltazar Brum, Minister of the Interior; Ing. Santiago Rivas, Minister of Public Works; Sr. Alberto Canessa, consulting engineer of the Ulen Co. The others shown are clerical assistants.

BOARD OF DIRECTORS OF THE IBERO-AMERICAN CIRCLE.

A number of students of the University of New York about four years ago founded an association, called the Ibero-American Circle, for the purpose of encouraging the study of Spanish and having such a course introduced into the curricula of other institutions. Despite numerous obstacles the association has prospered and is doing good work in fostering cordial relations between the students of the United States and those of the countries of Latin America. The association now boasts of over 100 members. The above picture shows the members of the board of directors, who, reading from left to right, are—upper row: Messrs. G. Weinburger, A. Muldavin, L. D. White, G. Richards, H. C. Legal, and H. C. Treiber; bottom row: Messrs. A. L. Ossa, vice president; M. Rosenfeld, president; and I. Ravitz.

TEACHERS TO STUDY IN SOUTH AMERICA.

To meet the exacting demands of large Spanish classes in their university and in order to obtain first hand information concerning South America for special courses, three teachers of the University of Texas are contemplating a tour through that continent during the present summer vacation. The University of Texas has an enrollment of 650 in its Spanish courses and also serves as a guide to the affiliated secondary schools of the State that wish to give instruction in similar subjects. Of the three teachers who are planning to make this journey, Miss Mina Weisinger anticipates publishing a text book in Spanish on South America for use in schools and colleges. Miss Laura L. Donnelly, another of the party, expects to teach Spanish in a high school in California, where there is much interest in Pan American affairs; and Miss Helen Phipps, the third member, is preparing certain manuscripts in connection with the Spanish work of schools and colleges, and also desires to make a study of the educational systems of the South American Republics and to gather material on the history of education for the use of the department of education of the university. Such interest in the Spanish language and in Latin American history is most commendable and the University of Texas is deserving of congratulations upon the practical methods it is pursuing in preparing its teachers to impart these subjects in the most efficient and competent manner.

A WORD OF WARNING.

The office of the Pan American Union is again called upon to emphasize to all who read the monthly Bulletin in Latin America that they shall be careful themselves, and caution others, in the matter of a certain class of advertisements sent from the United States and now appearing in many of the newspapers of the principal cities of Central and South America. It would seem as if many so-called "get-rich-quick" propositions and other schemes of doubtful expectations had sought out the Latin-American field as one where they might make a success even if they failed in the United States. These advertisements, of course, do not deceive the average man and woman of intelligence, but they do not fail to attract every now and then those who are not familiar with the numerous efforts which are made to get money from gullible persons through cleverly stated appeals. Confidence should not be placed in advertisements which make representations that, on their surface, are not deserving of credence and that point out ways of making money which are manifestly intended only for the benefit of the advertisers. Recently several illustrations of this kind of advertising have been sent to the Pan American Union, and these, in turn, have been turned over to the Post Office Department with the suggestion that the department consider whether they did not come under some violation by the advertisers of the laws having to do with the use of the mails.

PANAMA—TO-DAY AND TO-MORROW[1]

A FEW years ago mention of the name Panama immediately brought to mind associations of a great canal. Panama and the canal were almost synonymous. Scarcely an issue of a magazine appeared without some story or article about the mighty waterway and the wonders of its construction. The vast importance of this interoceanic water route and the interesting history of its building have been so abundantly described that for a while they overshadowed everything else in connection with the Republic of that name. In fine, you almost lost sight of the fact that Panama was a country of which the canal was merely a part.

Then came the formal opening of the canal. Ships began to sail through the remarkable "ditch," and the commerce of the world included it in its consideration of trade routes and trade development. Its operation has become an accepted fact, and now that the causes of the final interruption have been removed and the channel is again open it no longer is the subject of writers' exploitation, but is regarded as a monumental expression of American engineering ability, energy, courage, and skill. Like all great undertakings it has partaken fully of its share of publicity; it has held the center of the stage, won the world's admiration, and has now passed into history.

With this step conditions in Panama began to readjust themselves to normal, and among the first things was that the word Panama again resumed its original and proper significance, namely, that of the name of a country. The spirit of commotion and excitement which filled the atmosphere and the capital during the days of building passed away. The extra forces of labor, skilled and otherwise, either left the shores of the country or quietly settled down in some part of the land to participate in its growth and future prosperity. The booming days of the construction period, when upward of forty thousand laborers and hundreds of thousands of tourists kept business humming at a lively clip, have given way to a more steady and reliable pace.

While the reaction from abnormal to normal times was at first sharply felt, conditions have to-day evened themselves. Panama is now on its way preparing for a gradual and natural growth. There seems to be every reason to look with optimism upon the future of the youthful country. As the gateway to the Pacific it should take an important rank in the markets of the West. It will be the distributing point for American and European houses. Merchandise in large quantities will be forwarded to this pivotal point to be reshipped

[1] By Harry O. Sandberg, of Pan American Union staff.

BIRD'S-EYE VIEW OF PANAMA CITY FROM ANCON HILL

Although modern methods of construction have been introdueed into newer buildings, many historical features of a Spanish town are still preserved. Narrow streets, balconied houses, ancient churches, and historie ruins are permanent and full of interest. In the foreground is the water reservoir. To the left, in the shape of a quadrangle, are the buildings of the National Institute. The population of the city is 37,600. Parks, driveways, attractive clubhouses, and comfortable hotels are found here and make life agreeable and pleasant.

Courtesy of Pictorial Review.

CENTRAL AVENUE (AVENIDA CENTRAL), PANAMA CITY.

A typical street of Panama. Trolley cars, automobiles, and carriages, moving along at a lively pace, give the city a constant air of activity and business

to the individual markets along the coast or to China and the Philippines. As the canal grows in use and importance so will the country itself profit from the advantages that must come to an entrepôt of ships and travelers. The business momentum of the country will be stimulated by the needs of the ships and the wants of the passengers.

But there is another side in the career of the young nation that compels attention and admiration. It is the progress of its national life, for Panama is still in its infancy, literally and figuratively. With only a dozen years of independent existence to its history it has been obliged to carry on the responsibilities of a sovereign nation and provide for the progress and welfare of a people. It has had to reconstruct, rebuild, and reorganize its public institutions from their former mold into newer ones to meet changed conditions. These, in turn, have supplied new hopes, high ambitions, and lofty aspirations. As a result there to-day exists a constitutional government, with His Excellency Dr. Belisario Porras as President, distinct executive departments, and a well-coordinated system of offices carrying out ideas and policies of advancement and progress.

Buildings affording ample quarters for the conduct of public affairs are evidences of the growing character of the nation and at the same time make attractive additions to the cities and towns where they are located. Public works and improvements are continually being planned and executed. New roads are being opened and highways are being constructed to offer outlets to rich interior lands. Important railroad developments in rich agricultural and pastoral regions are nearing completion. The Government is encouraging extensive agricultural development and is doing what it can to promote this phase of national prosperity. Education is receiving careful consideration; the standards of schools are being elevated; practical arts and crafts constitute important branches of the curricula of the schools for both young men and women.

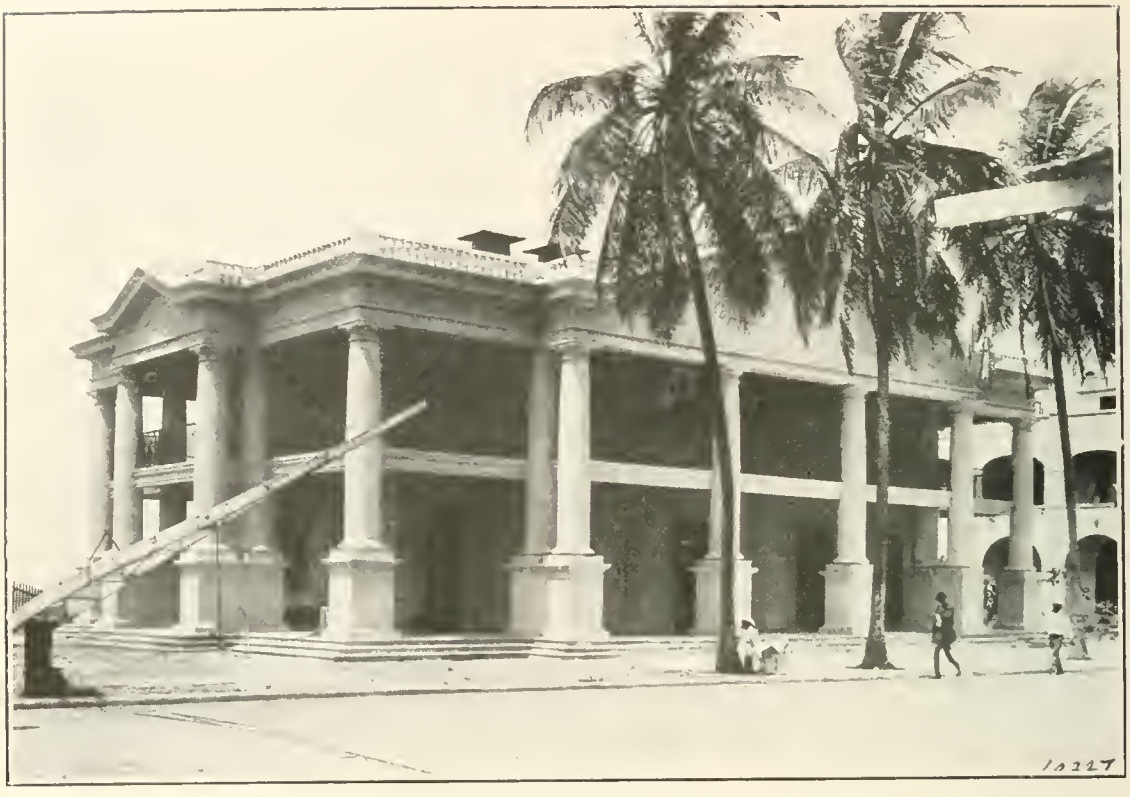
On the other hand the tendencies of the Government are finding a ready response in the representative business and professional elements. Recently there was organized at the capital an association of commerce composed of the leading business and professional men. While the objects of this body are similar to those of associations of such character, yet there is an additional activity which speaks well for the interests of the country. It is the cooperation of the society in the matter of suggesting legislation and consulting with officials on matters of importance. To foster the commerce and welfare of the Republic of Panama is the statement that appears on one of the association's booklets; and already, as part of the activities, a special committee has published a brochure for distribution to tourists. This pamphlet sets forth in brief some interesting historical data and then outlines a number of little journeys around the country for visitors.

THE GOVERNMENT BUILDING AT PANAMA CITY.

This is one of the prettiest and most imposing structures in the city, built of white rubble and cement plaster. The east and west wings are given over to the offices of the various executive departments; in the south wing are the National Assembly rooms and in the north the National Theater.

RAILROAD STATION AT PANAMA CITY.

An imposing building of concrete cement, large, airy, cool, and equipped with every accommodation for the comfort of passengers and the expeditious dispatch of trains and freight. It is centrally located in the heart of the city.



TYPE OF NEW BUILDINGS AT COLON, PANAMA.

This light and airy concrete building is the office of a steamship company at Colon. In its style of construction it is typical of the newer buildings that are fast replacing the old wooden houses on the Atlantic port of the Isthmus.

THE MUNICIPAL BUILDING AT PANAMA CITY.

The building stands in the Municipal Plaza and is one of the most attractive buildings in the country. It was completed in 1910, and it occupies the historical site of the old Cabildo (city hall), where in 1821 independence was declared from Spanish domination.

STREET SCENE AT PANAMA CITY.

THE CATHEDRAL AT PANAMA CITY.

The cathedral is situated on the north side of Plaza Independencia and was completed in 1760. With its broad towers and high steeples it is one of the most interesting historical landmarks in the city.

Evidences of the country's forward march are seen everywhere. On the Atlantic side the city of Colon is practically being reconstructed on its main thoroughfares. The old wooden houses are being supplanted by rows of concrete buildings presenting a light, airy appearance. New stores, new houses, and new activities combine to make this port one of the liveliest on the Atlantic coast line.

At the other end, Panama City, the same is true. For example there is the National Exposition. A short ride over a splendid road, either by trolley or by automobile, brings you to the fair grounds. The road parallels the picturesque bay so rich in lore and tradition of the buccaneers and the Spanish Main, and in the midst of a new section springing up with beautiful residences stands out the group of exposition buildings. To extol and honor the memory of Balboa is the expressed object of this exhibition, and proud and honored indeed would the valiant navigator feel if he could but behold the hundred and one objects of interest displayed in these artistic buildings, and see the strides in art and industry, in progress and civilization, that the land has made. The fair was opened early in February of this year and will remain open for several months. When it closes its gates the buildings will be turned into practical usages. It is possible that some Government department will be housed in one of the group; another may be turned into a schoolhouse; a third will probably remain as a permanent exhibit. A new hospital is also being talked about and it is very likely that this location will be selected for its construction.

A practical development resulting from placing the exposition on this suburban lot has been to stimulate the building of handsome private residences in that vicinity. Many of the better classes of people are erecting new homes in the neighborhood, and before long a fine suburb should mark the long stretches of beautiful country fanned by the cooling breezes of the bay and away from the hustle and congestion of the city proper.

Panama City itself always offers much of interest. The streets, though narrow, are well paved; and sanitary conditions are all that may be desired. The houses are picturesque with their balconied fronts, and scarcely a house exists but there is some store beneath it. This, of course, is the result of a sudden growth of business. Of churches there are many; and historic landmarks constantly revive memories of marauding pirates, romantic days, and of the glories and opulence of what was once one of Spain's strongest and best-garrisoned cities on this hemisphere. The tourist can still see the ruins of old Panama across the green savannas and can cross the famous bridge over which Morgan marched to attack and sack the city. The tower of the Cathedral of St. Anastasius rises above the other remains of fortifications and dungeons now overgrown with dense vegetation and tropical jungle.

FLAT ARCH IN THE RUINS OF OLD SANTO DOMINGO CHURCH, PANAMA CITY.

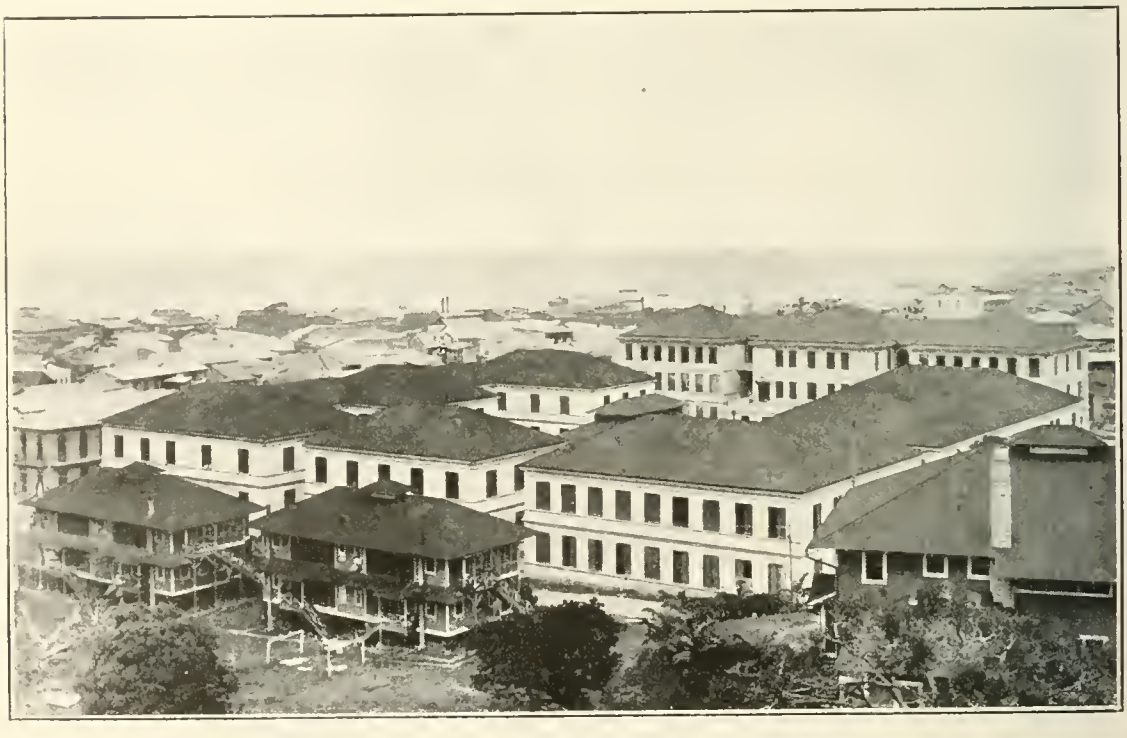
The archway forming part of the architectural structure of the church is unsupported by capstones and is over 250 years old. For many years it has been one of the most interesting sights of the city, but it may soon be pulled down to make room for a modern and more substantial edifice.

RUINS OF THE TOWER AT OLD PANAMA.

In striking contrast to the numerous elements of modernity found in Panama are the crumbling remains of Old Panama, about 6 miles southeast of the city. The few scattered walls, overgrown with tropical forestal growth, bring to mind the stirring stories of Capt. Morgan and his raiding buccaneers of the Spanish Main.

MEDALS AWARDED IN PANAMA'S ARTISTIC AND LITERARY CONTEST.

Recently under the auspices of the National Institute of Panama a contest was held throughout the entire country in cultural activities. Poets, essayists, writers, musicians, artists, sculptors were invited to submit their best works. Medals of gold, silver, and bronze were awarded as first, second, and third prizes, respectively. The name of the winner together with the nature of his work were inscribed on the prize.



THE NATIONAL INSTITUTE OF PANAMA.

A unit of buildings erected at a cost of nearly a million dollars. The school was opened in 1911 and is to-day under the direction of Edwin G. Dexter, a noted American educator. The school is for young men and offers a wide curriculum embracing normal, commercial, and classical courses.

INTERESTING SCENES IN AND AROUND PANAMA.

Upper: Market boats and water front of Panama City. Boats from along the coast run in at high tide and wait until the tide ebbs, when they can unload on the beach and sell their produce without extra expense of marketing. Center: Bridge over the Changuinola River. From Almirante a narrow gauge railroad runs to the interior, traversing the valley of the fertile Changuinola, where grow in fruitful abundance vast areas of banana and cacao plantations. Lower: Hospital and sanitarium at Taboga Island. The island is situated in the Bay of Panama, and as it is easily reached by launch from Panama City it has become a favorite picnic and vacation resort.

Then return to the new Panama, with its impressive public buildings and modern improvements. There is the national palace in which are the offices of the various executive departments. It is an imposing building of white rubble and cement plaster. Two wings flank the main façade. In the south section are the meeting halls of the national assembly; in the other wing is the national theater. The municipal building is another attractive building, occupying a block in the Municipal Plaza, and marking the spot where stood the Old Cabildo (city hall), nearly a century ago, when the domination of Spain was overthrown in this part of the continent. The Cathedral, with its square towers and high decorated steeples, marks another historic spot, and around the plaza that it fronts stands the bishop's palace, the national lottery, a hotel, and several other substantial buildings.

In admiring the country's achievements in the matter of public buildings you can not help being impressed with the character and standards of its higher schools. Primary education has made steady advances, but the secondary schools command attention. They indicate another phase of the national growth. First comes the National Institute, under the directorship of Edwin G. Dexter, former commissioner of education in Porto Rico. The institute consists of a group of buildings, halls, classrooms, and dormitories that would be a credit to a small university, and under the supervision of the director, Mr. Dexter, a comprehensive curriculum has been inaugurated. This includes normal-school courses, commercial studies, classical subjects, and special work in higher mathematics. The school is for young men, and the Government provides scholarships to meritorious students from the various Provinces. Comparable to the institute is the Normal School for Girls, where the students specialize in classical subjects and train for public-school teachers.

The School of Arts and Crafts for young men and the Professional School for young ladies are two other institutions of a splendid character. The former is in charge of Mr. Charles L. Stockelberg, who has developed an institution where useful trades are taught through practical methods. The school contains well-equipped shops in carpentry, electricity, printing, bookbinding, lithographing, graphic and metal arts, and the young students do considerable work in the school for the Government, as well as for private concerns. The funds thus received are utilized in improving the shops and purchasing additional equipment. In the professional school for young ladies the students are taught domestic sciences, dressmaking, fancy work, stenography, and telegraphy.

Two other institutions that are worthy of more than passing notice are the school of painting and the national conservatory of music. The former is in charge of Señor Don Robert Lewis, a talented Panaman artist, who recently returned after an absence of

STEAMSHIP SERVICE TO THE PROVINCE OF CHIRIQUI.

The regular steamship service from Panama to David, the capital of the Chiriqui country, together with the railroad which has just been completed in this region, now affords adequate transportation facilities between the capital and the interior. These two agencies, moreover, should be the impetus for an extensive and rapid development of the remarkable agricultural and pastoral resources of this section of the Republic.

SCENE ON THE CHIRIQUI RAILWAY.

The total length of this new railway, including spurs, sidings, etc., is approximately 62 miles. It begins at the little village of Pedregal, the port on the Pacific Ocean for the entire Province, 300 miles west of Panama, and about 5 miles south of David, the capital of the Province. At David the railway divides into two branches, one extending west and then northwest and making its terminus at La Concepcion, 18 miles away; the other extends in a general northwesterly direction with Boquete Bajo, on the Rio Caldera, as its terminus, a distance of about 28 miles from David. At Dolega there is a 7-mile branch line tapping a cattle and sugar-cane country in the Potrerillos district.

AGRICULTURAL COUNTRY TRAVERSED BY THE CHIRIQUI RAILROAD.

With the completion of this railroad extensive areas of cattle and agricultural lands are made available for profitable development. The upper picture shows a street in David, the capital of the Province of Chiriqui. The lower picture is that of the llanos extending between David and Alanje, on the David-Concepcion branch of the railroad.

nearly 18 years spent in Paris studying and painting. A number of his works have won meritorious prizes and are exhibited at the National Exposition. The conservatory, on the other hand, is presided over by Señor Don Narciso Garay, of Colombia. During the school season public concerts are rendered regularly by the students, and the halls are always crowded with select audiences. In fact, the conservatory concerts have become quite an institution in the social life of Panama.

In connection with the educational and cultural pursuits of the country a contest was recently held under the auspices of the National Institute. Writers, poets, essayists, artists, musicians, and sculptors were invited to submit their work. Competent judges carefully reviewed the ambitious efforts of the various contestants and public announcement was made of the winners. Gold, silver, and bronze medals, appropriately inscribed with the winner's name and the field of his endeavor, were awarded as first, second, and third prizes.

While all this attests amply the advance that Panama is making, yet the country fully realizes that in order to sustain its enlightened policies it must also develop a steady and dependable source of national wealth. It must look toward the development of its rich and fertile lands and must encourage an agricultural expansion for the creation of a sturdy foundation for future progress. This thought occupies the minds of the constructive men of the Republic and finds expression in the numerous statements concerning the future of the country. In the pages of "Panama in 1915," a descriptive volume containing a number of splendid contributions by prominent men of Panama, appear the following significant paragraphs touching on this subject:

> The agricultural future of Panama can not be bettered by any other country in the world, if proper measures be taken to develop it properly. This is the great problem, to develop agriculture.
>
> The reasons on which we base the preceding statement are the following:
>
> (1) Panama is situated in the Tropics, and it is well known that the agricultural products of the tropical zone are the most valuable.
>
> (2) Because the cacao of Chiriqui is the one that obtains the highest price in the London market.
>
> (3) Because the coffee of Boquete attains a price equal to the best of Central America.
>
> (4) Because the sugar cane is as good as that from any other tropical country.
>
> What do we need to make agriculture in our country at least the equal of that of other tropical countries? We need:
>
> (1) To induce our farmers to raise such staples as rice, beans, corn, etc., in sufficient quantities so that we shall not have to import them.
>
> (2) To establish model farms in the Provinces and place them in charge of men experienced in tropical farming; that is, farmers from countries similar to ours, who are familiar with the use of the plow and other agricultural implements, leaving for the future the scientific study of agriculture.
>
> (3) Construction of bridges across rivers and brooks, repairing of roads, and grading them in mountainous regions so as to make transportation of products practicable and easy by automobiles, wagons, and packs.

IN THE HARBOR OF ALMIRANTE, PANAMA.

The harbor boasts of a splendid concrete and iron wharf and, together with a number of adjoining buildings, forms part of the equipment which facilitates the shipments of bananas and other products from these regions. The waters of the bay are described as extremely picturesque, pure and tranquil, and so clear that objects in the bottom may be identified to a depth of 15 feet.

THE FALLS AT CHORRERA, PANAMA.

Much of the interior of Panama loses that effect of a tropical jungle which one associates with the name. On the south coast especially the scenery is in places rugged. There are numerous rivers from which power can be obtained, and in fact it has been determined that from such beautiful falls as this of Chorrera sufficient power is available to operate the contiguous portion of the new system of interior railways.

STREET SCENE IN BOCAS DEL TORO, PANAMA.

One of the cities that has enjoyed an exceedingly rapid development. With its swamps and marshes filled in and reclaimed and buildings regulated in their construction by certain standards, conditions of health and sanitation have been wonderfully improved. The city has two theaters, and is in constant communication with foreign countries because of its splendid port and harbor facilities.

Proper appreciation of a country's needs and methods for developing them are powerful assets, and the young Republic is quick with its sense of responsibility. Already it has established an experimental agricultural school outside the city of Panama, and under the practical guidance of experienced agriculturists farming is taught to the young men. Moreover, through liberal and even generous land laws the Government is bending every effort to attract immigration and to encourage its own people to develop the soil. For Panama is exceptionally fortunate in the variety of its climate and natural resources. Tropical plants of all descriptions, as well as many peculiar to the Temperate Zone, thrive there. The varying character of the land, with its different soils and altitudes, makes it possible to raise the greatest variety of crops in a comparatively small area. As one writer aptly states, on a strip running back 25 or 30 miles from the Pacific Ocean along the shore, fine playa furnishes the best possible ground for coconut plantations. Back of this is excellent sugar land. Still farther back, fibers and rubber thrive. And so, in succession, tobacco, cacao, coffee, and, in the higher altitudes, the vegetables of the temperate regions. Along the Costa Rican border is a belt of tropical fruit land as rich as any in the world. While oranges, grapefruit, mangoes, pineapples, papayas, etc., grow wild in different parts of the country, they are not cultivated, and large quantities are still imported. Cattle of an excellent breed have been raised here, and this industry on a large scale offers a potential source of wealth.

The Province of Chiriqui holds the preeminent place for the future agricultural development. The railway starting from Pedregal and extending to David and there branching off into two directions to La Concepcion and to Boquete, with a spur into the Potrerillos district has just been completed and inaugurated, thus affording transportation facilities for a growing cattle and agricultural district. In the Chiriqui district, moreover, there is every element of natural wealth. The coast valleys are followed by immense table lands one and two thousand feet high, which in some districts abound in timber and tropical vegetation. Between such prairies and the range of mountains rise the mountain peaks two, three, and six thousand feet, respectively in Tole, Bugaba, and Boquete. These are covered with a black rich vegetable soil showing an exuberant and natural vegetation. The richness of the Province consists in the coffee, tobacco, and other products. The climate is healthful and pleasant, and there has already grown up a flourishing colony of foreigners, some of them former employees on the Canal Zone and others who have been attracted to the country by the opportunities for profitable agricultural development.

Panama stakes its future hope in its soil. The country is young, rich, and potential. Its people are patriotic and enthusiastic. The Government is progressive and farsighted, and the combined influences of such qualities augur well for a healthy development of the youngest of the American nations.

THE SOUTH AMERICAN STORE[1]

A NATIVE dugout canoe bearing men and women and children was moving with the current down the Iguazu, the westward-flowing river that separates Brazil and Argentina, and empties into the treacherous Alto Parana. Evidently the party had emerged from the Brazilian wilderness some miles up the river and was bound on a shopping expedition to Port Aguirre. The latter is an outpost of civilization, comprising plots of cleared land, several small houses, a population of 20 or 30 people, and not the least interesting, a little store.

Soon the canoe neared the Argentine shore, and curiosity impelled the writer and two companions to hurry to the water's edge; not only to meet the people themselves but to inspect the curious products which appeared to be aboard the little craft. Friendly greetings were exchanged, and then the "cargo" was lifted ashore parcel by parcel; it consisted of skins, hides, medicinal plants and birds of the forest.

It was rather a curious looking lot of individuals that meandered up the hill to the store, a few hundred yards from the river bank. The wooden building was small; so small indeed that the "crowd" of 10 or 15 people could not conveniently get within its walls; the weather, however, was delightful and nature's counter proved to be a more popular trading ground than the store itself. The merchant, if the term be permissible, was an Italian who had been living at Port Aguirre a year or more; he knew some of his visitors and gladly welcomed them. Negotiations were soon opened. Five parrots were "swapped" for a bottle of liniment; tin lanterns and cans of oil were exchanged for a calf's hide; a big parcel of carved and colored gourds passed into the store and a bag of flour was handed out; several packages of a well-known American breakfast food were scornfully declined by the shoppers; but various other products of the land were traded for those of the factory; and doubtless many people would consider the little outpost store and its customers on the Iguazu far more interesting than the great merchandise establishments of the large cities of the continent.

As a general rule, the South American is not a born merchant, and he has left a very large part of merchandising activity to the foreign-born citizen. All over the continent the European trader or shop-

[1] By William A. Reid, Pan American Union staff.

SCENE ON THE AVENIDA RIO BRANCO, RIO DE JANEIRO.

This beautiful avenue stretches through the heart of the city's shopping district, and is crowded with people and vehicles day and night. At right angles, and very near the point shown in the picture, the famous shopping street, long known as Rua do Ouvidor, crosses the avenue. The Ouvidor has been renamed Moreira Cesar, but the old name seems to be more popular with the masses.

keeper has established himself; and in varying degrees, according to his longer or shorter residence, has partaken of the habits and customs of the people among whom he lives. Native young men of the better classes have followed occupations considered more in keeping with long-established tendencies and so-called positions in life. They are found in the learned professions, in all branches of the government service, in banks and financial institutions, in literary pursuits, and on the staffs of schools and colleges. A change, however, or an "awakening" as a former political leader recently declared to the writer, is taking place in the mind of the South American, and he is engaging more extensively in active business life. "I have dropped politics," said the gentleman above referred to, "and you see for yourself the hundreds of American and European articles I am displaying in my establishment. The change I have made is typical of what many other men have done all over my country."

The first-class store in South America does not widely differ from similar establishments in other lands. During the hours of the day the merchants seize every opportunity for displaying their wares before the customer's gaze. A special feature which the foreigner notices is the practice of placing the goods as near to the customer as possible; and the arcade, so common in Latin American cities, offers facilities for large displays. Goods are hung upon the inside and outside walls of the arcade and frequently strung on wires over the sidewalk; the front of the house is so constructed that a steel folding door or a series of them are operated to open or close the establishment.

It is rather surprising to the foreigner visiting South American countries for the first time to find most of the best and prettiest shops almost hermetically sealed at night. If the building is of the older style of construction the heavy shutters are closed and locked by iron bars; if a more modern building, the flexible sliding doors and windows are completely drawn, and the passer-by can see nothing within the shop. All is darkness save the light of the street lamps; no brilliantly lighted windows help to add cheer and brightness to the street.

In European and American cities the average merchant is willing to spend money freely for nightly display of his wares and merchandise. He realizes and appreciates the publicity. The evening crowds upon our streets are highly entertained and even instructed by window displays of the busy streets. Herein lies the difference: for as a rule, the South American streets, busy and attractive during the day, are quite the reverse at night. Even in some of the larger cities the old custom of hermetically sealing the shop at night prevails. This custom offers no advertising features, and those who fail

AVENIDA 18 DE JULIO (18th of July), IN MONTEVIDEO.

This street scene depicts one of the shopping districts of the Uruguayan capital. Many beautifully appointed stores are located on this broad business street. The auto-bus has also been introduced to aid the street cars in handling the traffic.

to visit the stores during the day may never get a glimpse of the goods offered the public. The practice, however, is undergoing changes, and the electric-light service and the electric sign are gradually being introduced and extended; and probably no city of Latin America has advanced further along this line than the Cuban capital.

Store politeness is quite noticeable all over South America. When a customer enters a store a "buenos dios" (good morning) is always said to clerk or proprietor, and on leaving, the same courtesy is observed. In the meantime, if one has made a purchase, the clerk has wrapped the article neatly and attached thereto a small handle—the latter is invariably used. It is made of wire or wood, and the customers appear to appreciate the little aid. The act of personally carrying home one's purchases is not quite so common as with the average shopper in the United States. Ladies in South America are always accompanied by a maid, who takes charge of small packages, while larger ones are sent to the customer's home by the shop employees.

In the retail and department stores of the larger cities the force of young women clerks and salesladies is gradually increasing in number; an innovation that has made the store neater in general appearance. Still there seems to be a barrier between the young woman and the occupation which throws her in contact with the public; but public opinion in South America, as everywhere else, is undergoing changes, and new avenues are opening to the woman worker.

In several South American cities there are sections or streets that have become famous as shopping centers, and every visitor wishes to see them and mingle with the shopping throng. One of the most interesting streets is the Rua do Ouvidor in Rio de Janeiro. Vehicles of every class are prohibited from entering this street, and the crowds surge up and down without the danger of losing limb or life from the rapid automobile or the weighty freight wagon. To ladies and gentlemen alike the beautiful shops along the Ouvidor never fail to attract and hold the attention. Articles of every conceivable variety are shown, and the fine plate-glass windows or open doorways invite closer inspection and thereby lessen the bulk of the pocketbook of the visitor.

In gay Buenos Aires at least one busy shopping street is closed to all vehicle traffic each afternoon at about 4 o'clock; for a few hours thereafter splendidly dressed ladies and gentlemen, workman and pauper, and the visitor from almost every land help to swell the crowds. The whole street for the time being becomes a variegated and active scene, and the shops and cafés reap the harvest of the sheckles. Other cities, of course, have their shopping districts, but nowhere on the continent do they represent more costly outlay than is exhibited on the streets above menticned.

Courtesy of La Ilustracion, Argentina.

INTERIOR VIEW IN ONE OF THE BEAUTIFUL STORES IN BUENOS AIRES.

This great establishment, a section of which is here shown, has found it necessary on account of increasing business to start an additional section on a near-by street. The larger stores of the city compare with the finest mercantile establishments of the world, having various departments and a constant flow of people.

In Buenos Aires the social hour at a great department store has become a well-established and popular custom. From about 5 to 7 o'clock in the afternoon wealth and aristocracy gather at the tea rooms in this establishment. Mothers and daughters are there; and it is quite the proper thing for the young man to be invited to join the party, or he may be a host himself with mother and daughters as his guests. Small groups are to be seen here and there about the rooms, conversation is animated, and even the foreign visitor looks forward to the pleasure of being present and of enjoying the social innovation. This feature of the store's activity is usually well patronized, and it not only popularizes the establishment but results in increased sales of merchandise.

In Montevideo there are five brothers engaged in mercantile pursuits. All are of English birth, but their stores are almost American. I know three of the brothers, and each one holds a friendly feeling toward our manufactured goods. Said the elder brother:

> Eighty per cent of our stock comes from the United States; we have no prejudice against selling such goods. If you made the other 20 per cent as cheaply and as suitable for our trade, we would not hesitate filling our shelves with American goods.

This merchant then showed the writer through his toy department, and demonstrated the superiority of certain European toys over the American article.

One of the brothers has branched out for himself. He, too, is selling mostly American goods, and his store is headquarters, so far as kindness and hospitality extend, for Americans who visit Montevideo and require stenographic service or other work of a clerical nature.

While the store in North America, especially in the larger cities, has builded upward or skyward the South American establishment has spread over the ground. A great Chicago house with its many floors filled with goods from all parts of the world contrasts strikingly with a well-known retail store in Bahia Blanca, Argentina, which, having many products of weight and bulk, displays them over acres and acres of land, some under cover and others exposed to the weather. We may actually ride in automobiles through this company's establishment, and such a trip impresses one with the scope and variety of the business transacted.

The "floating store" is a term that might be appropriately applied to many of the ships that voyage up and down the Pacific from Panama to Coronel. Hundreds of miles of this coast line where rain never falls have a population of thousands of people. They live in a land where nothing grows; so the traveling merchant aboard ship has gradually become a factor eagerly awaited by the small traders. When the vessel arrives at a port and the general cargo is

INTERIOR OF A RETAIL STORE IN BARRANQUILLA, COLOMBIA.

Display of imported goods.

SECTION OF A STORE IN ASUNCION, PARAGUAY.

This large establishment, one of whose display rooms is above pictured, deals in all kinds of leather goods in wholesale and retail lots. The house is the delight of the cowboy just in from the plains, for here he finds many leather articles needed in the great outdoors.

being loaded or unloaded, the itinerant merchant back on the stern is selling his goods and wares. He has many things, but more particularly foods and vegetables; and from his stock he sells to the small merchant at almost every port. If the ship is sailing northward the store is likely to be depleted before reaching Callao; if southward bound, everything will be disposed of before arriving at Valparaiso. The aft section of the upper decks of the vessel serve as the trading mart, and the average ship carries a number of wholesale or retail traders. Quite recently the writer was much interested in noting the activities of a seller of cheap watches aboard a west coast steamer. The timepieces were his only stock in trade, but he managed to dispose of one or more at most of the ports visited.

By far the most interesting shopping places in South America for the foreigner are the market places. The more remote the city or town the greater interest it seems to possess. In La Paz, Caracas, Asuncion, and other inland cities natives often travel for many miles to reach the Sunday morning market, the most active day of the entire week.

They bring thither many little articles of trade, and it appears strange that enterprising foreigners have not seized the chances of presenting such novelties to the American or European shopkeeper. Native rugs, horsehair baskets, handmade silver spoons, curios, carvings, walking sticks of beautiful woods, toys to please every child, pottery that would readily appeal to housekeepers, and various other things too numerous to mention. Such articles are usually not found in large quantities, but with some encouragement from the foreign buyer these little industries could be developed. We sell such wares from Oriental lands; why not import and offer similar articles from South America to the notion trade in the United States?

Looking into shop windows in various cities and towns has been one of the writer's favorite pastimes; it reveals many business secrets. But it would require too much space to detail these experiences. Take, for instance, an average progressive city like Bahia Blanca, which is situated about 450 miles south of Buenos Aires, with a population of from 25,000 to 30,000 people, and one sees such American articles as cowboy hats, breakfast foods, shoes, ice-cream freezers, fly paper, cedar mops, Gibson drawings, padlocks, hardware, thrashing machines, cameras, magazines in English and Spanish, gas and electric fixtures, harvesters, cook stoves, etc.

In vain one looks about South America for the equivalent of the 5 and 10 cent store so common and so successful in America. It is explained that few of the articles handled by such stores are made in South America and the import duty restricts the field. It would seem, however, that sooner or later some enterprising company would

THE SAN CARLOS ARCADE, SANTIAGO, CHILE.

The arcade and the many excellent facilities it offers for displaying merchandise before large numbers of people, as they pass to and fro, is popular in South America. Beautiful display windows and seats for the weary are special features of the San Carlos Arcade, above pictured.

find a way to establish a retail store along more or less similar lines. Ample capital, of course, should be available and possibly a selected list of articles could be advantageously introduced.

One United States company, among others operating along the west coast of South America, numbers its employees by thousands, and while the majority of them belong to the laboring classes, there are many others who are counted with the world's best business men. Almost anything may be purchased from its branch stores which operate in the principal cities of the several countries; and while the firm is devoted to wholesale buying and selling there are retail divisions where an automobile, a sewing machine, a piano, or in fact any number of things may be purchased, the selection usually being made from the samples exhibited.

To start a store in the larger centers of business activity in South America is expensive. In Buenos Aires, which is typical of the expense of other large cities (the rents have decreased during the last year or two), the rental of a small store room is quoted at $300 up per month; a more pretentious room, or several combined, may be had from $1,000 per month upward.

If an agent simply wishes office room from which to operate, it may be secured for, say, $35 per month in a fairly good business building on a principal street; a front room costs more, depending of course upon location, accessibility, etc. There are also municipal taxes on agents operating in Buenos Aires. If one has a room and displays samples, the tax is approximately $125 per month; without samples it is slightly over $200 a month. The fees vary greatly on commodities as well as in different municipalities.

Several South American cities are noted as places where the high cost of living has passed far beyond the bounds of reason. To some extent, at least, the living expenses are due to dress; and in few parts of the world does the question of fine clothing play a more conspicuous part in one's daily life. The well-dressed person everywhere is duly appreciated, but the aristocratic and well-to-do South American perhaps places more stress upon such matters. The visitor, of course, must conform to custom regardless of cost, if he meets with the greatest business or social success. On the other hand, one may live cheaply in almost any part of South America if he is willing to wear clothing locally made and eat native foods. For instance, the 20 or 30 cent shoes or sandals, the locally made hat, and the homemade jacket, trousers, and shirt answer the demand of the laborer, or indeed, the majority of people of interior mining or agricultural regions. Well-stocked stores carrying these varieties of goods are found everywhere and they do a fair amount of business.

One of the questions frequently asked by prospective travelers is whether it is possible to supply one's demands for clothing after reach-

STREET SCENE IN LIMA, PERU.

On one of Lima's oldest and narrowest streets there has developed a most animated shopping district, and here, especially in the afternoons, the aristocratic families come in automobiles to shop or to sip tea, a comparatively recent and now most popular fad at the best restaurants.

ing a certain South American city. Broadly speaking, the question may be answered in the affirmative; but it will be found far more expensive to patronize the South American store, and for the sake of economy, if for no other reason, the traveler should fully provide clothing necessities and take them along.

The following list and prices of articles recently purchased by the writer at the places named may be of interest to the reader, as they show briefly the high cost of a few imported articles. In most cases the price paid was about double that prevailing in American cities. Other goods are proportionately high.

Article.	Place.	Price.
Pair shoes	Buenos Aires	$11.50
Stick shaving soap	Montevideo	.50
6 small jars potted ham	do	2.00
1 box matches	Paysandu	.05
½ pint wood alcohol	Posados	.66
1-pint can cocoa	Salto	1.50
1 small bottle pickles	do	.50
½ pint mucilage	Asuncion	.80
1 necktie	Santiago	2.00
Newspapers	Buenos Aires	.04
1 can corn	Antofagasta	.60
1 pineapple	do	.80
1 bottle ginger ale	do	.30
Eggs, each	do	.15
Spool silk	La Paz	.16
Soda water, bottled	do	.15
Cake Pear's soap	Arica	.50
Toothbrush	do	.50
Linen handkerchief	Lima	.40

There are few North Americans actually operating stores in South America. Numerous merchants who handle goods from the United States in greater or smaller quantities are found in the larger cities and towns; and many stores and shops are advertised as American houses, but their proprietors are either Europeans or citizens of South America.

Two active young men from New York opened a clothing store in Quito several years ago. They are importing ready-to-wear goods and their house appears to be receiving a fair amount of trade. They adapted their goods to the rather peculiar demands of the Ecuadorean market; a feature that can not be very thoroughly applied until after one has resided some time in a given community.

TUNGSTEN, A REMARKABLE METAL

OF the rarer metals that in the last few years have emerged from hiding in metallurgic cabinets none appears to have a greater economic value, or destined to play a greater part in the progress of industry than tungsten. Half an ordinary lifetime ago few had ever heard of tungsten, yet to-day it is one of the most valuable and indispensable of metals.

Tungsten was first detected in 1781 and produced as a metal two years later. It occurs in a number of minerals but the more common, serving as production ores, are wolframite, a tungstate of manganese and iron; hübnerite, a tungstate of manganese; ferberite, a tungstate of iron, and scheelite, a tungstate of calcium. Wolframite, hübnerite, and ferberite grade into each other and the word wolframite—sometimes, but improperly wolfram—is occasionally used as a class name.

The most notable properties of the metal tungsten enumerated by Mr. Frank L. Hess of the United States Geological Survey are as hereafter set out.

Tungsten has a very high specific gravity or density; that is, it is a very heavy metal, about two and a half times as heavy as iron, its specific gravity being from 19.3 to 20.2, depending on production treatment.

Tungsten is one of the least expansive of all metals; that is, it responds in bulk but little to the action of heat and cold.

The melting point of tungsten is remarkably high, about twice that of iron. Its melting point is so high that, as Mr. Hess says, "It can not be melted directly into a mass and for this reason it is obtained from its ores only as a metallic powder. By indirect means it can be worked into solid masses ranging from wire 0.0002 inch (0.005 millimeter) in diameter to more equidimensional pieces weighing 2 or 3 pounds. The processes used will probably be improved, so that larger pieces may be made if there is sufficient call for them."

The fineness of the wire, 0.0002 of an inch, makes it almost impossible to be seen by the naked eye, since it would take six such wires laid side by side to equal the diameter of the very finest hair from the human head.

Tungsten is to a very high degree resistant to oxidation. It is thus unlike iron, which rusts easily. It is practically insoluble in the common acids and in hardness varies from 4.5 to 8. The best razor steel has a hardness of from 5 to 5.5, and quartz 7, so that

Courtesy of the Engineering and Mining Journal.

TUNGSTEN MINING IN PERU.

An ore vein of the La Dura mine in the Tamboras district of northern Peru.

tungsten at 8 is harder and will cut either a razor blade or a quartz crystal. In tensile strength it surpasses the best steel by more than one-third.

The hardness of bodies is measured on what is called the Moho scale, in which talc is represented by 1 and diamond, the hardest of known substances by 10.

Tungsten easily alloys with other metals, particularly with iron, and gives to the alloy in part its properties of hardness, high fusing point, and great tensile strength.

The following table from Mr. C. G. Fink, quoted by Mr. Frank Hess, shows comparatively some of the properties of aluminum, copper, nickel, iron, and tungsten:

	Density at 18° C.	Tensile strength per square inch.	Melting point C.	Electric resistence per cubic centimeter.
		Pounds.		*Microhms.*
Aluminum	2.7	43,000	660	2.62
Copper	8.87	66,000	1,083	1.589
Nickel	8.75	96,000	1,453	6.93
Iron	7.8	450,000	1,600	8.85
Tungsten	19.6	610,000	3,267	4.42

The value given for iron in the column of strength is for high tensile strength steel.

Taking into consideration the remarkable properties of tungsten, its great tensile strength, its hardness, its ductility, its high melting point, its resistance to oxidation, and that it is a fair conductor of electricity, not so good as silver, copper, and aluminum, but much better than iron or nickel, it is not difficult to see the great industrial and commercial possibilities of the metal.

Is a metal needed which can be drawn into a wire finer than nearly any other wire, or which has strength greater than the strongest steel, or has a cutting edge almost as hard as a diamond, does not rust, will not melt, even in a steel smelting furnace, and with all is twice as good an electric conductor as steel; then tungsten answers every purpose. It is seldom that one needs all of these qualities in a single substance. Ordinarily it is quite sufficient if it possess one of them. Then, again, for certain purposes two or even three of the qualities are needed. Through the whole industrial proposition runs the matter of cost. If hardness alone was the quality to be considered, tungsten might answer every requirement, since it is harder than quartz sand and nearly as hard as corundum, but as an abrasive it can not be considered in competition with these and other hard substances which can be produced on a ton basis as cheap as tungsten on a pound basis. But combine with hardness the extraordinary tensile strength of tungsten, over 600,000 pounds to the inch, we have a material

Courtesy of the Engineering and Mining Journal.

THE CAMP AT TAMBORAS, PERU.

These tungsten mines are at an altitude of about 13,200 feet above sea level.

Courtesy of the Engineering and Mining Journal.

WORKS FOR THE CONCENTRATION OF TUNGSTEN ORES AT TAMBORAS, PERU.

which will do things that no other material will do, and will have a broad use notwithstanding it be costly to produce. Imagine a tool with a cutting edge which can be dulled by nothing less hard than corundum or diamond and at the same time will not fracture with a blow or a twist that would break or shatter the best tempered steel, and you have a tool the industrial possibilities of which are almost unlimited. Its hardness, its strength, its resistance to rust, and its nonexpansibility render tungsten far superior to steel for almost every purpose for which steel is now used. Were it as cheap as steel it might entirely supplant steel; but this it is not, and this it never will be, although greater ore production and improved methods of reduction will no doubt bring the price of tungsten far below its present high figure.

A tool made of all tungsten is harder, stronger, and cuts better than one of steel and it will cut substances that a steel tool will not cut. But an all-tungsten tool is very costly, not only on account of the high cost of the metal itself, but also because of the high cost of fashioning the tool. It must be remembered that tungsten is almost unmeltable and so can not be cast. It is very difficult to forge and requires a corundum wheel or diamond dust to sharpen. In fact, its very virtues as a tool material give it a refractoriness which makes it difficult to the highest degree to make a tool thereof.

The rarity of the ore as compared with iron ore and the extreme difficulty of reducing and working the metal may be taken as conclusive that tungsten will only to a limited degree supplant steel, although additional ore discoveries, improved reducing and working processes may enlarge its field. But there is no occasion to supplant steel. Iron on account of its broad dissemination, its abundant quantity, cheapness of production, and inherent good qualities is beyond question the most valuable metal used by man; but iron has been much improved since man first began to use it, and may be further improved. Just as the introduction into iron, a comparatively soft and weak metal, of a small quantity of carbon makes steel, a strong and hard metal, so the introduction into steel of a small quantity of tungsten makes a yet harder, stronger, and more useful metal. But first before the matter of tungsten as an iron alloy is considered, it is well to consider in addition to hardness and strength the high fusing point of tungsten as compared with steel.

All cutting means friction and friction produces heat. The turning of a wagon spoke in a lathe may produce heat sufficient to draw the temper of the cutting tool.

To draw the temper is to soften the tool and render it inefficient. Iron melts at about 1,600° C., but it is not necessary for heat to attain anywhere near the degree sufficient to melt the iron for it to kill the temper of the steel. To turn or cut steel or iron with a steel tool it

Courtesy of the Engineering and Mining Journal.

PAY DAY AT TAMBORAS.

Nearly all the laborers are Peruvian Indians direct descendants of the so-called Incas, whose empire was overthrown by Pizarro early in the sixteenth century.

is, of course, requisite for the tool to be tempered harder than the material to be cut. Even so, friction producing heat immediately sets up the process of weakening the tool, and the faster the cutting is done—that is, the greater the speed at which the lathe turns—the quicker the tool breaks down. Prior to the use of tungsten some very excellent tools for the cutting of metals were produced, but none of these could properly be called high-speed tools. In fact, it was necessary that even with the best of them the speed be kept low; otherwise the tool lost its cutting edge. At first sight the novice may not see the importance of low and high speed. One hundred revolutions a minute means that a lathe, boring machine, or other like instrument, with a given operator or operators will in a day do a certain amount of work, but 200 revolutions a minute means that the same human labor and the same equipment will do twice as much work, and 500 revolutions means five times as much. We have therefore the rather remarkable condition that a 30-ton machine requiring a dozen men to operate can be held back to one-fifth, or even one-tenth, of its possible working efficiency, merely because some cutting head weighing 2 pounds or less will get too hot if the machine works as fast as it should work. A hot tool is not of itself objectionable; in fact, it is quite desirable to be able to cut hot metals, and necessarily no tool can remain cool while cutting heated metal. The hot tool is not objectionable. The objection is that the hot tool ceases to be efficient simply because steel softens at too low a temperature. The melting point of tungsten, as seen from the table above, is nearly twice that of iron, and this fact is one of the bases of the superiority of tungsten over steel as a high-speed tool-making material.

A tungsten cutting head would enable the machine to work at its full capacity. In fact, it enables the machine maker to construct machines to operate at speeds and to do work which could not be considered if using steel cutting heads.

The field for the use of tungsten appears almost unlimited. If something a third stronger than the best tensile steel is wanted, it is tungsten; if something nearly twice as hard as razor steel, it is tungsten; if something that will preserve these virtues of great strength and adamantine hardness, although heated to a white heat, again it is tungsten; but—and this is the fly in the ointment—tungsten is one of the rarer metals, and so will remain costly, and, because of its very excellencies, it is intractable and most difficult to work. Unlike iron, copper, and tin, it is stubborn, obstinate, and undisciplinable. Yet, and not withstanding that tungsten has not so far been melted in the mass to the fluid state, human ingenuity has found ways to work the metal that are quite satisfactory. At present its use as an iron alloy accounts for about three-fourths of the total production of tungsten and it is a safe prognostication to make that this proportion, while it

may be increased, will not be decreased. Alloys to the uninitiated sometimes present curious contradictions. Suppose we take two metals having a hardness, respectively, of 3 and 5, melting points 400° and 600°, and tensile strengths 40,000 and 60,000 pounds per inch, and combine the two in equal proportions. One might expect the resultant alloy to have a hardness of 4, a melting point of 500°, and a tensile strength of 50,000 pounds per inch. As a matter of fact, the alloy might be for hardness, melting point, and strength equal to the most resistant of the two metals. It might even, for one or for all the qualities, be more so. Thus, copper and zinc alloyed together produce brass, and brass is stronger, harder, and less meltable than either copper or zinc. So copper and tin produce bronze, and lead and tin, pewter, but bronze and pewter are harder, stronger, and require more heat to melt than either of their constituent metals. It may even be that a new quality is apparently developed as in the case of bronze or bell metal, the most resonant of metals—produced from two, sometimes three, of the least resonant of metals.

In like manner it is with tungsten and iron. The effects of tungsten are produced in the alloy in greater proportion than the weight or value of tungsten might indicate, although unlike the alloys brass, pewter, and bronze, tungsten steel is never superior or even equal to the best one of its constituent metals. Nevertheless the virtues of tungsten persist in the alloy beyond the measure of the tungsten used. To illustrate, say the melting point of tungsten be 3,000° C. and of iron 1,600° C. and that one used 20 pounds of the former and 80 pounds of the latter in an alloy. A novice might expect that the formula $(3{,}000 \times 20) + (1{,}600 \times 80) \div 100 = 1{,}880$ would give the melting point of the alloy. Nothing can be further from the truth. The true melting point of the alloy might be 2,400° C. or even higher. Of course the illustration is fanciful and only intended to show the principle. In its ultimate analysis alloying is but little understood even by the best informed chemists. Most of the knowledge is empirical and the word is used to cover what are no doubt several distinct processes of metallic combination.

Vanadium, zirconium, chromium, nickel, titanium, molybdenum, tantalum, and other metals as well as tungsten are used in alloy with steel and to improve it. Some of these metals are less hard, melt easier, and have less tensile strength than steel, yet in the alloy every one of them improves the steel in these qualities. Necessarily this represents different chemical processes. The good qualities of tungsten apparently enter directly into the steel like sugar into water, vanadium apparently acts upon the carbon and in the steel so as to increase the beneficial effects of the carbon, and titanium and zirconium apparently are simply cleansers.

Courtesy of the United States Geological Survey.

SPECIMEN OF WOLFRAMITE, A TUNGSTENATE OF IRON AND MANGANESE (ACTUAL SIZE).

The weight of this specimen is 6 pounds.

While it is no doubt true that the most extensive use of tungsten in the future—as it is at present—will be in alloying with other metals, mainly iron, there can be no question that the use of the metal in a more or less pure state will also be much broadened. In addition to filaments for electric lamps, its present greatest use, as a pure metal tungsten must extend itself in other fields, and almost its only limit in competition with steel or even tungsten steel will be the cost of production and cost of working. In the field where cost is not a primary consideration its use is extending rapidly.

For the making of fine cutting tools no known metal approaches it in value.

The use of tungsten in the making of bronze powders is quite common. These powders are made by fusing potassium tungstate with tin, and the colored compounds produced are employed for decorative purposes. Magenta bronze is made by adding tungstic oxide to fused potassium carbonate; subsequent treatment of the product obtained yields violet crystals. Other alkali tungstate bronzes are prepared electrolytically by fusing tungstic acid and metallic carbonate. Tungstate sodium bronzes of the following colors are produced: Golden yellow, blue, red, and reddish yellow.

In the textile industry sodium para-tungstate is employed for fireproofing cloth and as a mordant for calico printing. Tungsten salts are also used as a mordant for silks.

Tungstic oxide is used in glass and porcelain manufacture for producing yellow colors. Sodium tungstate is used for decolorizing acetic acid.

An important use of tungsten as a metal is in numerous applications in electrotechnology as contacts for magneto spark coils, sending keys, etc. It is superior to platinum or platinum-iridium for such uses. The heat conductivity of tungsten is twice that of platinum, so that the tungsten contacts in use remain much cooler. On account of its high melting point it is an ideal target material for Röntgen ray tubes, much better than platinum.

By far the most important use of the pure metal tungsten at present is in the manufacture of filaments for incandescent electric lamps.

The first commercial incandescent lamp made by Thomas A. Edison used a carbon filament. The filament is the important thing about an electric glow lamp. The production of a working filament was the most serious end of the problem worked out by Edison and on this he spent most of his time and made the greatest number of experiments. After trying hundreds of substances he settled at last on carbonized bamboo as presenting about the only form of carbon with sufficient strength. Later it was found possible to use cotton fiber and yet later the carbon filaments were produced from cotton dissolved in a strong solution of zinc chloride to give a thick sirupy

liquid. The filaments were made by the "squirting" process, in principle identical with that by which macaroni is made, the material in a semiliquid or plastic state being forced by pressure through a small orifice from which it emerges in strings. In the case of the carbon filament the nozzles of the squirting machine are immersed in jars of methylated spirit. The spirit precipitates the cellulose in the string of dissolved cotton in the form of a continuous filament.

From the very beginning of glow lamp lighting it was seen by Edison and others that what was needed was a metal filament. The carbon filament had an efficiency of 3 watts per candlepower. Later the process of metallizing was adopted, i. e., the cotton-carbon filaments in the finishing process were immersed in crucibles containing graphite and raised to a temperature of about 2,000° C. The metallized carbon filament had an efficiency of 2.5 watts per candlepower. This was an improvement, but not yet good enough.

The first metal filament lamp was made by Auer von Welsbach, the maker of the incandescent mantle for gas lighting. Welsbach's filament was made of osmium, one of the platinum group of metals. This was in 1898. Improvements were made in the production of the osmium filament by using the squirting process, but this filament has not been generally successful and osmium is a very costly metal, much more valuable than gold. The first really commercial metal filament lamp was the tantalum lamp introduced in 1903. The first tantalum lamps had filaments of about 0.28 millimeter in diameter, but later by improvements making the metal more ductile filaments of less than 0.02 millimeter were produced. But a difficulty presented itself, carbon filaments of sufficient length could be easily accommodated in the ordinary glass bulb by giving the filament one or two whirls or loops, but tantalum has a lower specific electric resistance than carbon and the filaments required to be two and a half times the length and one-quarter the diameter of carbon filaments for equal voltage and candlepower. This led to the stringing in zigzag fashion of the filament on supports called the "spider," now quite familiar in tantalum and tungsten lamps.

The tantalum lamp had an efficiency of 1.7 watts per candlepower, a further progress in electric glow lighting. Over 100,000,000 tantalum lamps were sold from 1905 to 1911.

The success of the tantalum lamp stimulated attempts to use tungsten, but the hardness and refractory character of the metal made it difficult to accomplish results. As first produced tungsten was extremely brittle, in fact it was not produced as a solid metal at all. The form was of a powder which could be more or less consolidated by pressure or hammering. Nevertheless, the experimenters, convinced of the great virtues of tungsten, continued work on the problem of making a lamp filament. First the process of substitution

was used, similar to that first employed by Welsbach in converting a platinum wire into an osmium wire. Welsbach coated a platinum wire with osmium and then drove off the platinum by volatilization. Later the amalgamation process of making filaments of tungsten was employed, and yet later the squirting process, the use of a paste containing tungsten powder. Dozens of inventors busied themselves in producing filaments by squirting, some using one kind of binder for the tungsten powder and some another. Gum, sugar, gelatin dissolved nitrocellulose, paraffin wax, and camphor were all used as binders, each requiring different after treatment for the perfection of the filament. Methods of squirting tungstic oxide and plastic tungstic acid were discovered. One of the most successful squirting processes employed collodial tungsten.

None of these processes, while in general successful, produced a sufficiently strong and durable tungsten filament. What was needed, as almost every one knew, was to produce tungsten which could be drawn in a wire. Ductile tungsten was the problem, but this problem seemed as insoluble as ductile porcelain. Meanwhile squirted tungsten filaments had increased the efficiency of the glow lamps so that it required only 1.25 watts per candlepower.

The discoverer of the method of producing ductile tungsten was Dr. William D. Coolidge. Dr. Coolidge's process was patented in the United States Patent Office, December 30, 1913, application filed June 19, 1912. In his application the inventor claimed that he had—

> been able to produce from this refractory, brittle, nonductile, and generally unworkable metal, a wire which is tough, fibrous, and elastic, and of high tensile strength, and have thus been able to facilitate the manufacture and improve the quality of tungsten incandescent electric lamps.

Dr. Coolidge further claimed that—

> the wire produced by my invention has formed various other applications and may be used wherever high tensile strength, freedom from erosion, or ability to withstand high temperatures are of value. So also the new material of which the wire consists, fully worked ductile tungsten, has in other mechanical forms a wide variety of useful applications.

In brief, Coolidge's method is to take the fine-grained yellow powder known as tungstic acid and reduce it by hydrogen in an electric furnace to a coarser-grained gray powder, which is metallic tungsten. This is molded by pressure, and without binder, into ingots about one-fourth of an inch square and 6 inches long. The ingot is put into an electric furnace again in an atmosphere of hydrogen and heated to a white heat. The effect of this heating is to compact and strengthen the ingot. It is again put into the electric furnace and brought to near the melting point and so kept until the ingot is sintered. It has now a luster and the particles are as if welded together into a firm mass. Yet the ingot is only comparatively strong. Even now it

Courtesy of the United States Geological Survey.

SPECIMEN OF SCHEELITE, A TUNGSTENATE OF CALCIUM.

would be broken by being allowed to drop from a height of 12 or 15 inches. At first it could be kept entire only by being supported. From the furnace the ingot is taken to the mechanical workings necessary to produce the fibrous texture of metal necessary for drawing into wire. It is swagged in a machine in the open air. It is then reheated and again swagged; this time the form being changed from square to round. This swagging is continued until the 6-inch ingot is 30 feet long and reduced in diameter from twenty-five hundredths to three hundredths of an inch. It now has a well-defined fibrous structure. It is then heated to a bright red heat and drawn successively through diamond dies, each die reducing its diameter and increasing its length. Meanwhile, as it is drawn the drawing temperature is reduced. The filament in a 10-watt lamp is about three-quarters of a millimeter in diameter, the finest wire ever produced by straight drawing. The results of this process is to produce a tungsten wire stronger and more elastic than steel, and this filament has an efficiency of 1 watt or less per candlepower.

Although tungsten lamps are now made by the millions, and will soon run into the billions, it is nevertheless true that comparatively small quantities of tungsten are used or will ever be used for this purpose. It is estimated that more than 100,000,000 tungsten lamps were made in the United States in 1914, but this accounts for only about 3 tons of tungsten concentrates. The amount used in a single lamp is so small as to be weighable only by the most delicate scales.

Many of the most important uses of tungsten are yet to be developed, and this development will come the sooner if improved methods of ore reduction are discovered or put into practice. The Coolidge process so successful in the production of wire, it is claimed, is suitable for the production of tungsten in other forms and for other uses than electric heating. Other discoveries in methods of reduction will no doubt be made and the Iron Age may well be succeeded by the Iron Tungsten Age.

Prior to the breaking out of the European war tungsten was comparatively a cheap metal. In 1912 tungsten oxide in the ore was sold for from 20 to 40 cents and the metal at about 75 cents a pound in the United States. The unit of sale is ordinarily 1 per cent of a ton in tungsten trioxide. At the beginning of 1914, according to Mr. Frank Hess, the price was $6.50 per unit (i. e., $6.50 for 20 pounds tungsten trioxide, WO_3), and toward the end of the year it was $9 per unit. At present it is quoted at $85 per unit.

This increase in price has stimulated prospecting and production all over the world. A newspaper clipping from Bolivia says everybody is out hunting wolframite. The same is true in Peru and Argentina, and important ore discoveries are being made almost every week. The production in the United States, which began a little

before 1900, was in that year 46 tons of ore, principally scheelite (tungstate of calcium). Production rose to 1,821 tons in 1910. It was 1,139 tons in 1911, 1,330 in 1912, 1,537 in 1913, and only 990 tons in 1914.

Tungsten ore has been produced in nearly every part of the world, most frequently as wolframite. It has come from Burma, the Shan and the Federated Malay States, Tonkin, India, Japan, Siam Australia, New Zealand, Island of Billiton, Austria, England, France, Germany, Italy, Portugal, Spain, Nova Scotia, the United States, and from Agentina, Bolivia, Brazil, and Peru in South America. In 1905 nearly 40 per cent of the ore came from the State of Queensland, Australia. The United States produced about 800 tons, Spain a little over 400, and Bolivia about 75 tons.

Four years later, in 1909, the United States led in tungsten ore production with 1,619 tons out of a total of 5,774 tons; Argentina was second with 900 tons, Queensland third, 679 tons, followed by Portugal, 609 tons, and New South Wales, 431 tons. In 1914 the leading producers were Burma and the Shan States, which did not begin production until 1910, but in 1914 produced 2,055 tons, followed by United States, 990 tons, Qeensland 442 tons, Argentina 435 tons, Bolivia 320 tons, Federated Malay States 317 tons, New Zealand 274 tons, England 230 tons, Japan 226 tons, and Peru 130 tons. The 1915 figures, when available, will no doubt show an enlarged production in Bolivia, Peru, and Argentina. Well-informed persons expect that in the future South America and the Malay Peninsula will be the centers of wolframite production.

PROMINENT IN PAN AMERICAN AFFAIRS

Francisco Glycerio, Senator from the State of São Paulo in the national chamber, and one of the most prominent factors in the political life of Brazil, died on April 12, 1916, after a protracted illness. His death caused great sorrow throughout the country for he was everywhere recognized as a man of marked leadership, a forceful propagandist, and an ardent advocate of the principles of republicanism in national government. For over a quarter of a century he was an active spirit in the political development of Brazil, and though time and again during this long period of years he was urged to accept public office, only rarely did he acquiesce, preferring to maintain an independence and to participate in public affairs along lines broader

than partisan official life would permit. The story of the Senator's early life makes a striking background to the elevated position he attained in later years. Born on the 11th of August, 1864, at Campinas, State of São Paulo, he received his preparatory education in the city of São Paulo. He then matriculated in the law school in the same city but the responsibilities of home and his widowed mother called him away from the classic halls of the college before he had completed the course. Impelled by the desire of a legal career, he sought employment in a law office, and before long Francisco Glycerio completed the course and was admitted to practice. As a lawyer he affiliated himself with the movement for the establishment of a Republic in Brazil. At the age of 25 he was proclaimed the chief of the Republican Party of his State, and with characteristic initiative and energy conducted the campaign in his Province. In this movement he was frequently invited into the deliberation of such historic characters as Benjamin Constant and Quintino Bocayuva. Under the new Republic the Senator served as Minister of Agriculture and outlined the policy for the railway development which followed. He reorganized the Government of his native State but refused to accept the post of governor. Among the founders of the new régime and in the situations which followed the creation of the new order of things, Senhor Glycerio was always regarded as an element for harmony and conciliation. His passing away removed from the public life of Brazil an honored, esteemed, and engaging personality.

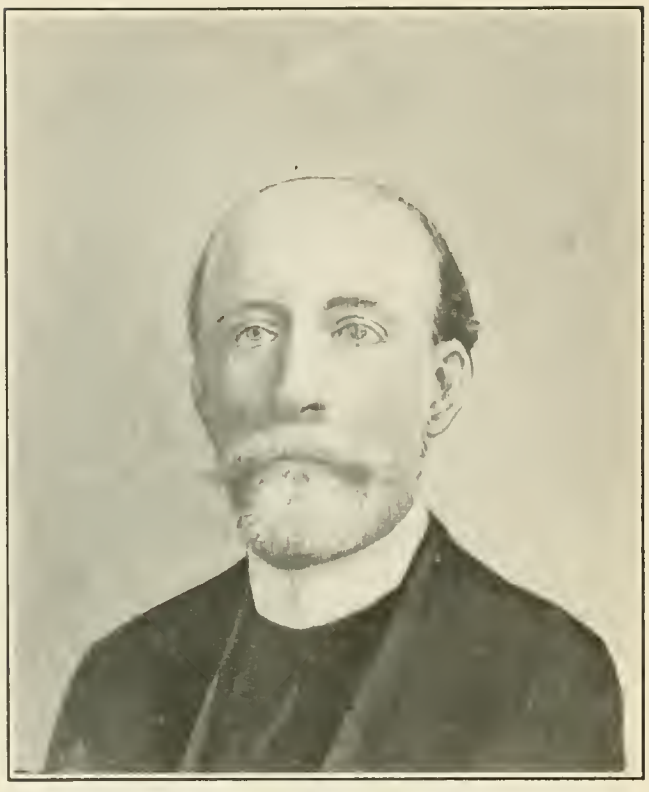
With the death of Señor Don José Elías Balmaceda, of Chile, on April 13, 1916, that country lost one of its most eminent sons, a member of a distinguished family which has contributed conspicuously to the history of the country. Sr. Elías Balmaceda was a public man of great prestige and wide influence. In the many years that he devoted to official life his integrity, character, and strength of purpose attracted favorable notice and won for him the respect and confidence of the nation. He was a brother of Sr. Don Manuel José Balmaceda, at one time President of Chile, and was born in Santiago in 1849. After completing a course of studies at the "Colegio Inglés" (English College) at Valparaiso, he followed a studious career for several years and then commenced his public career as Deputy for the Department of Casablanca. He has been Senator for Tarapaca and for Ñuble. In 1909 he enjoyed the distinction of serving as President of the Senate and here he distinguished himself by his firm and fair ruling. In 1897, while sitting in the Senate as Representative from Tarapaca, he presented a measure in connection with the issuance of paper money which was regarded as a sound economic project and in later years was adopted by the very same Senators who contested it at the time he first proposed it. Cultured, of a studious mind, and versatile, Sr. Balmaceda always defended the progress of the country's

institutions and industries. He was ever ready to serve and assist his friends, and his noble patriotism and lofty standards of public and official morals kept him in the highest esteem and admiration of his fellow citizens.

The death of ELMER LAWRENCE CORTHELL at Albany, New York, on May 16, brought to a close a career of remarkable achievement in engineering projects of vast importance in the United States and Latin America. In fact, he had gained recognition not only as an experienced, practical, and constructive engineer, but as a student of international relations and an active worker in Pan American affairs his name and reputation were generally known throughout the Western Hemisphere. For nearly half a century Mr. Corthell had been connected with important construction works, and over 30 years of this period had been devoted to work in the countries of South and Central America, Mexico, and Panama. He was regarded as one of the best informed men in the United States on matters pertaining to his profession. Mr. Corthell personally conducted and assisted in the execution of various engineering undertakings in Mexico, Guatemala, Panama, Colombia, Brazil, Argentina, and Chile. Several years ago he published an interesting pamphlet entitled, "Brief of View of Engineering Practice and Personal Experience in Latin America, 32 years, 1880–1912" containing a large amount of data and information regarding engineering practices in the lands with which he was so familiar. He always manifested a lively interest in matters pertaining to the development of closer relations between the Americas, attending Pan American international gatherings and contributing important papers to the deliberations.

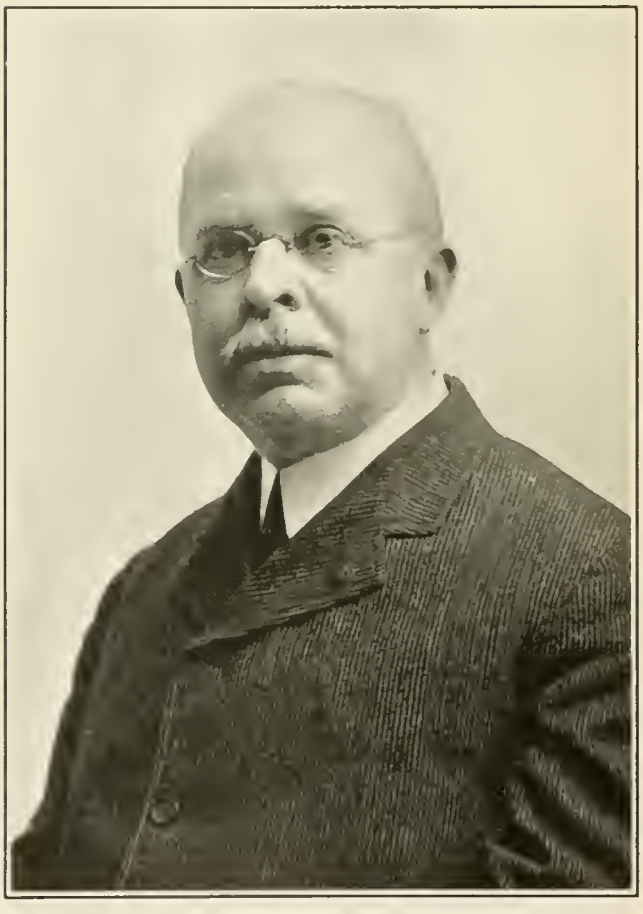
Mr. Corthell was born in South Abington (now Whitman), Massachusetts, in 1840, and graduated from Brown University, Providence, from which institution he received the degrees of A. B., M. A., and Sc. D. Among the more notable enterprises with which he was associated in the United States may be mentioned the construction of bridges over the Mississippi River; the Atlantic and Pacific Ship Railway, which extended its operations over the Isthmus of Tehuantepec and of which work he was chief engineer; also he was chief engineer of construction of the New York, West Shore & Buffalo Railway. He was a member of the advisory board of consulting engineers to build 1,000 ton barge canals in New York State, a project involving an expenditure of over $100,000,000. In foreign countries, and especially in Latin America, he acquired an enviable record by his services as chief engineer of the Tampico Harbor Works, Mexico; as consulting engineer of the National Public Works of the Argentine Government; as chief engineer of the Port of Para works, Brazil, and of the Rio Grande do Sul developments. Mr. Corthell was

JOSÉ ELIAS BALMACEDO.



FRANCISCO GLYCERIO.

ELMER LAWRENCE CORTHELL.



JOSEPH S. WARD.

identified with the International Engineering Congress of Chicago, 1893; United States delegate and vice president of the International Navigation Congress at Brussels; delegate of the Argentine Government to the International Navigation Congress at Dusseldorf, and was a member of the United States Permanent Committee of this congress. He also enjoyed membership in the leading scientific and engineering societies of the United States and Europe, and served as officer in a number of them. He wrote extensively on great engineering and navigation developments. His works include a history of the Mississippi Jetties; a report on the Brussels Navigation Congress; another on Maritime Commerce, Past, Present, and Future; Reports on Increase in Size of Steamships; and he contributed numerous articles to encyclopoedias and technical journals. In the Bulletin of the Pan American Union there have appeared within recent years articles from his pen, one on Engineering and Commercial Conditions and Problems in Latin America, and another entitled, Notes on Latin American Engineering Problems and Their Bearing on Trade.

The many friends of Joseph S. Ward, who for years had been an interesting figure in railroad circles in the United States, Brazil, and Mexico, were grieved to learn of his death on February 17, 1916, at his home in Williamsport, Pennsylvania. Mr. Ward had devoted the greater part of his life to railroading and was a member of the engineering expedition that was sent out from this country in 1878 to survey the well-known Madeira-Mamore Railway in Brazil. This expedition, it will be recalled, left the United States under the direction of the builders of the road, Collins Bros., of Philadelphia. After a year in the jungles of this Amazonian district, the party was compelled to suspend operations and return to the United States because of difficulties which had arisen with the financial backers of the project. The hardships which the engineers endured and the memories of the year spent in the wilderness developed a bond of friendship between them, and these pioneers of the Madeira-Mamore organized an association, of which Mr. Ward had been elected secretary. The society met annually and afforded the members of that surveying party an opportunity to reminisce over their South American exploits. When in 1912 the railroad was finally completed and opened to traffic Mr. Ward accompanied the inaugural party on the first trip. Mr. Ward was born in Philadelphia July 21, 1856. He was educated in the Broad Street Military Academy and the Polytechnic College of Pennsylvania, from which he was graduated with the degree of civil engineer. Returning from his Brazilian experience in 1879, he entered the service of the Pennsylvania Railroad for a second time, and later became identified with the Mexican National Construction Co., being located in Texas and Mexico. From there he joined the

engineering staff of the Philadelphia & Reading Railroad, with which he was associated at the time of his demise.

Santiago Perez Triana, one of the best known diplomatists and statesman of the present day, died in London, England, on May 26, 1916. The news of his death brought profound grief to those who knew him intimately and were associated with him in his various activities and regret to all those students of international relations who have followed with interest the brilliant writings and utterances of this honored son of Colombia in his versatile career. Through many years of residence in Europe, Señor Perez Triana was widely known at the various capitals, while on the American Continent he was held in the highest esteem by all the countries of the Pan American Union. In fact, he was frequently honored by these several countries with appointments and commissions to represent them in official and diplomatic capacities and at international gatherings.

As a member of the Colombian delegation to the Pan American Financial Conference, held in Washington, D. C., 1915, he distinguished himself signally by his stirring and eloquent addresses on the subject of the Monroe doctrine and Pan Americanism. When the delegates left the capital for their tour through the eastern part of the United States, high government officials urged him to accompany the party and he consented despite impaired health. He was frequently the spokesman for the Latin American delegates at the various functions tendered them during the trip.

In international circles Señor Perez Triana ranked among the best known diplomatists. He was Minister of Colombia at London and Madrid, and also represented in a diplomatic capacity Salvador and Nicaragua. At the Second Hague Conference in 1907 he gained the esteem and respect of the most distinguished men of that historic gathering, and at the closing session he was honored by his colleagues, who designated him their spokesman. He was also at one time a member of the permanent court of arbitration at The Hague.

Señor Perez Triana was born at Bogota about 55 years ago. He was the son of Santiago Perez, some time President of the Republic, He received his early schooling in that country, and later continued his education in the United States, France, and especially Germany, where he studied at Bonn and at old Heidelberg. He was a linguist of unusual ability and was able to speak and write in English, French, or German with almost the same facility as in his native Spanish. He was also a banker and economist of considerable note and was known in financial circles through his activities as well as his literary contributions on these subjects. He was the founder of "La America" in New York several years ago, and wrote a great deal for other publications. Among the magazines with which he was most intimately associated was *Hispania*, which he founded in London.

SANTIAGO PEREZ TRIANA.

ESTABISLAO S. ZEBALLOS.

EDUARDO POIRIER.

LUIS MELIAN BAFINUR

Among those actively concerned with the public affairs of the Argentine Republic to-day there are few who enjoy so unreservedly the esteem and confidence of his friends as does Dr. ESTANISLAO S. ZEBALLOS, statesman, diplomatist, lawyer, and man of letters. With a notable record of service at home and abroad, universally recognized for his ability as a publicist, scholar, and scientist, Dr. Zeballos has always manifested a keen interest in the political and social development of his country and has won an enviable reputation among his compatriots.

Born in the city of Rosario July 27, 1854, he is descended from a family whose name is associated with the historic founding of that city. At the age of 20 he graduated from the university with the degree of Doctor of Laws, and then commenced the practice of the profession of which he is considered one of the ablest members. He served as minister of foreign relations on two different occasions, the first time being under the administration of President Pellegrini. Leaving the foreign office, he was appointed envoy extraordinary and minister plenipotentiary to the United States and to Mexico, with residence at Washington.

Shortly after returning to Argentina he was elected to the Chamber of Deputies, representing in turn the Provinces of Buenos Aires, Santa Fe, and the Federal District. At the present time he is one of the most prominent and influential members of that body. Throughout his career he has devoted much time to literary endeavors. He is the founder and director of the Revista de Derecho, Historia y Letras, de Buenos Aires (Review of Law, History, and Letters, of Buenos Aires), one of the leading law magazines of South America, and in addition he is a prolific contributor to the other leading papers of his country. Among his more ambitious works is a series of three novels depicting life of the Indian tribes, very much after the style of J. Fenimore Cooper. He also published a work descriptive of the Argentine Republic and various journeys that he made through the country.

Dr. Zeballos holds a position in the legal profession no less eminent than in literary circles. He is a member of the faculty of law and social sciences, where he lectures on private international law. He has also written authoritative essays on the law of patents, trade-marks, and divorce, and his discussions on the early relations of Argentina with some of the neighboring countries are regarded as classic contributions.

Dr. Zeballos was a member of the Argentine delegation to the Fourth Pan American Conference at Buenos Aires, 1910, and one time a member of the permanent court of arbitration at The Hague. He is the founder of the Argentine Scientific Society, the Argentine

Geographic Institute, and a member of the Royal Academy of Language and of History, of Madrid; the American Academy of Political and Social Science, of Philadelphia; and other learned bodies.

Señor Don Eduardo Poirier, diplomatist, author, and scholar, is a conspicuous member of the galaxy of prominent Pan Americanists. For many years Señor Poirier, who now is the minister of Guatemala in Chile, Brazil, and Uruguay, has stood among the able workers in the cause of fostering closer ties among the Nations of the Western Hemisphere. Versatile and accomplished, he has made successful use of the press, the forum, the pen, and the learned and scientific bodies to promote the Pan American spirit. He was one of the principal organizers and the secretary general of the First Pan American Scientific Congress at Santiago, Chile, 1908–1909, and gained high praise for the efficient manner in which he assembled this great gathering and for the successful issue of its deliberations. Although unable to participate personally in the Second Pan American Scientific Congress recently held at Washington (1915–16), on account of delicate health, he nevertheless rendered splendid service in Chile and other countries in encouraging appropriate representations.

Señor Poirier is the author of the Pan American hymn which was sung by a large chorus at the opening session of the Second Scientific Congress and proved such an inspiring feature of the day's proceedings. The hymn was translated into English by Prof. William R. Shepherd, of Columbia University.

Minister Poirier was born in Chile, and after receiving his education became interested in public affairs. In 1886 the Republic of Nicaragua appointed him consul to Chile, and two years later, chargé d'affaires. At the same time he was similarly honored by the Republic of Salvador. In 1891 he resigned these posts to serve his own country as minister of Chile to Mexico. From Mexico he proceeded to Central America, where he held in turn the position of secretary general of the Government of Salvador and minister of Salvador to Mexico. He then traveled through Europe and the United States, returning to Chile to devote his time to the interests of his native country. In 1901 Ecuador designated him as its consul general in Chile, and in 1903 Guatemala named him minister.

Señor Poirier is a member of numerous scientific societies. He was one of the honorary presidents of the Second Latin American Medical Congress, Buenos Aires, 1904; first vice president of the Third Latin American Scientific Congress, Rio de Janeiro, 1905; honorary president of the Third Latin American Medical Congress, Montevideo, 1907; and secretary general of the First Pan American Scientific Congress, Santiago, Chile, 1908. Among his many works may be mentioned the descriptive volumes of Chile, "Chile in 1908"

and "Chile in 1910," the Pan American hymn, and a translation into Spanish of "Quo Vadis," a version which has been favorably received because of its excellence.

Among the noted literary men of South America who have acquired special prominence in Pan American circles is Dr. Luis Melian Lafinur, of Uruguay, one time minister of that Republic to the United States. In addition to his reputation as a distinguished barrister and a well-known man of letters, he is regarded by his countrymen as one of those honorable and independent citizens who has brought honor to his native land through unselfish service at home and abroad.

Born in 1850, Dr. Lafinur gave promise at an early age of his talent as a writer and student. Devoting his natural abilities to these lines, he soon rose to prominence. As director of the Anales de Ateneo (Annals of the Atheneum) of Uruguay, he produced many of his best compositions and won well-deserved honors as one of the foremost poets of his country. On numerous occasions while engrossed in his private work he was called upon for public service. He always responded to these calls with patriotic enthusiasm, and at the conclusion of his commission he modestly retired to pursue his own work.

Dr. Melian Lafinur was a member of the university council and is professor of civil law at the university in Montevideo. Through the Atheneum, of which he was president and the guiding figure, the cultural and literary activities of the Nation were fostered and encouraged, while the "Anales" published under its auspices furnished the medium for spreading broadly the ambitious efforts of the literary men of the land.

For four years, from 1888 to 1892, he was deputy for Montevideo in the National Assembly, and his political activities are frequently pointed out to the younger generation as models of purity and altruism. His writings are not confined alone to literary efforts and poetry, but embrace historical and legal treatises. In 1907 he was appointed envoy extraordinary and minister plenipotentiary to the United States and served in that capacity till 1911, when he returned to Uruguay to continue along the lines of his profession. During his residence in Washington he made many friends among those with whom he came in contact.

PAN AMERICA IN THE MAGAZINES

The Descent of the Rio Gy-Paraná, by Leo E. Miller, in the March number of the Geographical Review (New York), is an interesting account of the experiences of that portion of the Roosevelt-Rondon Scientific Expedition of 1913, which explored this river at the time the main party, under Cols Roosevelt and Rondon, was descending and mapping the Rio Theodoro, and a third party was descending the Juruena and Tapajoz.

MR. LEO E. MILLER.

Mr. Miller was one of the representatives of the American Museum of Natural History who accompanied Col. Roosevelt on the celebrated Roosevelt-Rondon Scientific Expedition through the interior of Brazil in 1913–14. The plans of the expedition provided for the separation of the party into three sections. The main section, under the direction of Cols. Roosevelt and Rondon, explored the Rio Duvida (River of Doubt); a second section descended the Juruena and the Tapajoz; while the third section, to which Mr. Miller was assigned, went down the Gy-Paraná. The full account of this part of the journey is given by Mr. Miller in the March number of the Geographical Review, published by the American Geographical Society of New York.

The party with which Mr. Miller was connected separated from the main expedition at a point called Sete de Setembro, about 6 miles from the headwaters of the Rio Theodoro, and proceeded overland in a northwesterly direction until they reached the Rio Commemoracão not far from Barão de Melgaço, the last of the Brazilian telegraph stations in this section. There they were compelled to wait for nearly two weeks before the batelão, ordered by Col. Rondon to be sent from the Maderia River, arrived. During this stay Mr. Miller had abundant opportunity to explore the surrounding forest with its interesting animal life, of which he writes:

On one of my walks in the forest I came upon a troop of peculiar little monkeys of the saki family, feeding in the top of a tall wild fig tree. They differed from all other known members of the genus by being entirely black, with snow-white noses. While feeding they were quiet, and the only thing that betrayed their presence was the constant pattering of small particles of fruit upon the dry leaves carpeting the ground.

Courtesy of the Geographical Review.

Courtesy of the Geographical Review.

ON THE GY-PARANA, BRAZIL.

Upper picture: Floating down the river in a batelão, the type of boat used on many Brazilian streams and called piragua in Venezuela. Lower: A rubber gatherers' camp on the Gy-Parana.

Presently they took fright, and away they went in a series of leaps and bounds, so that the tree tops were agitated as by a violent gust of wind; they uttered queer little whining squeaks as they ran and soon disappeared from view. A small one of the same species which I owned was a most amusing little pet and never failed to gain a place in the affections of anyone who beheld it—even the most calloused camarada; it was of a most playful and friendly disposition and, if petted, made the most ridiculous faces and bubbled with laughter. Another monkey that was common in the forest was a species of *Ateles*, or spider monkey, which is very appropriately named on account of its slender build and long, wiry arms and legs; it also is of a black color, and swings its way through the branches much after the order of a gibbon, although it lacks the latter's agility. The Indians are very fond of this species, both for food and as pets; but whatever epicurean merits may attach to the flesh, in appearance the creatures are most repulsive. The face is pinched and drawn, with a long suffering expression about the eyes, while a tuft of long, stiff hair extending over the forehead like a ragged cap gives it a greater look of misery and grotesqueness. One specimen which I collected measured 6 feet 2 inches from the tips of the fingers to the tip of the tail.

Birds were not uncommon but rather hard to observe on account of the density of the vegetation. Near the river stretched a wide band of bamboo, beautiful to look upon but impossible to penetrate without the aid of a machete. Just beyond the trees grew tall and in close proximity, giant castanhas, Heveas, and ironwoods intermingling their branches to form a canopy of deepest green, impervious to sunlight and through which rain filtered slowly; palms, ferns, and thorny shrubbery formed a dense undergrowth, so that progress at best was slow. From all sides came the clear ringing "hoo-whee-whee hoo" of the gold bird, or whistling cotinga, often misnamed the bell bird; and although the sound came from but a few feet overhead, it was usually impossible to locate the dull, slate-colored songster perched motionless on a well screened branch. The smaller species of birds traveled in large flocks, doubtless deriving some mutual benefit from this mode of living; usually the band was preceded by a few scouting brown woodhewers, some with slender bills 4 inches long bent in a half circle, flitting silently from trunk to trunk, lighting low down and running up rapidly, while they searched the crevices in the bark for insects; then came the vast host of vireos, warblers, flycatchers, tanagers, and woodpeckers, completely investing the trees in their all-absorbing quest of a livelihood. Twigs snapped, seeds dropped, the woods seemed full of fluttering wings and chirping voices; but in a few moments the noise grew faint and stopped; the tireless army had gone its way, and the vanguard of trogons, resplendent creatures with blood-red breasts and metallic green backs, suddenly appeared, hovered in mid-air to snap off an enticing fruit, and then hurried away. Occasionally we were fortunate enough to shoot a curassow, a large turkeylike bird, and then our Brazilian chef prepared a national dish called canja. It consists of a fowl and rice boiled together, and is delicious.

The batelão having at length arrived, a crew of 18 men was mustered and the party was soon shooting downstream with the rapid current of the river. The description of this part of the journey is most interesting, as may be seen from the following excerpts:

The Commemoracão, the headwater branch of the Gy-Paraná on which we were, is a deep river from 300 to 1,000 feet wide, with reddish water and a swift current. It was not necessary for the men to ply the oars except when rounding some short bend where steerageway was required, and this was fortunate as it rained so much of the time that the men were glad to seek the protection offered by the covered portion of the boat. In the intervals between the deluging showers the sun blazed down mercilessly; trees on both sides of the narrow lane of water sparkled as if bedecked with jewels. In places the forest rose from the river's edge in sheer walls of variegated

Courtesy of the Geographical Review

THE RAPIDS OF SAO VICENTE ON THE LOWER GY-PARANA.

"After leaping over a 20-foot ledge the river rushes through a narrow rock-filled gorge; enormous bowlders tower out of the channel like so many black, unvanquished monarchs. Tongues of spray leap to a height of 40 feet, and clouds of vapor rise in a constant stream. With the exception of the Salto Pello of the Rio Sacre and Utiarity Falls of the Papagaio, we have seen nothing to compare with Sao Vicente during our entire journey across Brazil."- (From "The Descent of the Rio Gy-Parana," by Leo E. Miller, in the Geographical Review.)

green; tree trunks, brush, and palms united into one solid battlement by mosses, climbing lilies, and ensnaring creepers. Again, clumps of graceful ita palms leaned far out over the water and then rose in a series of stately, feather-crowned columns. At frequent intervals we had glimpses of the animal life that lurked within the impenetrable barrier of the forest fastness. Monkeys were especially plentiful, and within an hour after starting we had seen four distinct species, representing as many families; there were files of howlers, the males jet black, while the females are of straw color, moving leisurely through the branches; troops of dainty squirrel monkeys, with deep chestnut backs and grayish heads and white faces, scampered over the tops of the lower trees. Black spider monkeys sat in the highest crotches and gazed down at us in stupid perplexity; and once we startled a family of woolly little night monkeys of a grayish color which had selected a thick clump of overhanging vegetation as their diurnal sleeping place. Large flocks of blue and yellow macaws, flying two by two, crossed the river high overhead, doubtless on their way to some choice feeding ground. Kingfishers sped away in front of the hurrying batelão, and from the depths of the woods came the muffled sound of an ivory-bill's tapping on a hollow trunk.

That night we reached the junction of the rivers Commemoracão and Pimenta Bueno, the latter a stream not less than 1,000 yards wide, with a great volume of water. The river formed by the confluence of these two streams is known as the Gy-Parana. We had covered a distance of 80 kilometers. In ascending, it had taken the batelão 19 days to cover the same stretch of river that we had just descended in one day.

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There were numbers of small alligators in the rivers not over 4 feet long, called jacaretinga; later on, we had the cook prepare one, as they were said to be good to eat. The flesh was of a white color when cooked and tender, but it possessed an objectionable muddy flavor, so that we could eat but little of it; however, the natives liked it.

The next day we covered a distance of 108 kilometers. The current in the Gy-Paraná is not so strong as in the Commemoracão, but, the weather being fair, the men pulled at the oars steadily during the 12 hours' travel with only short periods for rest and refreshment. All meals were cooked aboard, on a fire built on a box of sand in the prow. Insects were not particularly troublesome, as we kept to the middle of the stream, which, receiving the water of numerous good-sized tributaries, was constantly growing wider. There were abundant signs of the close proximity of Indians on both sides of the river. We saw some palm-leaf lean-tos used for overnight stops, with the charred sticks of a camp fire in front; where the water eddied slowly against a crumbling bank, bamboo stakes protruded above the muddy stream—remnants of an ancient fish trap—and occasionally we passed a small, cleared spot, now overgrown with rank weeds and second-growth sprouts, which marked the site of an old plantation.

Realizing the importance of the good will of the wild folk of whose existence in the surrounding forest there was such abundant evidence, the Brazilian Government had erected a number of small bamboo and palm-leaf sheds various distances apart, near some of the more recently used trails that led from the water into the dark jungle. Under each rough lean-to a bench, made of long poles laid across sticks driven into the ground, had been built. It was the custom of the officials in going up or down the river to stop at each of these stations and place beads, knives, and trinkets on the benches as a peace offering to the Indians; but so reticent had been the latter that not one of the articles had hitherto been touched. Great was our surprise and joy to find that all the precious offerings had been removed, and that the Indians themselves had left a number of tokens of friendship in return. There were arrows 6 feet long, beautifully adorned with the bright-colored feathers of trogons, toucans, and other birds; parcels of Brazil nuts neatly done up in leaves; a few ears of maize, a feather headdress, and a small pottery bowl. We collected all these treasures and left many more presents in exchange.

Courtesy of the Geographical Review

CALAMA, A PORT ON THE MADEIRA RIVER, BRAZIL.

"Toward evening we reached the mouth of the Gy-Parana and entered the vast muddy expanse of the Madeira: we crossed to the other side and landed at a small port called Calama, the home of Senhor Asensi, owner of the rubber camps we had passed on the last days of our journey down the river."—(From "The Descent of the Rio Gy-Parana," by Leo E. Miller, in the Geographical Review.)

As we neared one of the last stations the sound of loud hallooing came from the forest on our right. We swung the great bãtelao toward the shore. We landed, but no sooner had we climbed to the top of the steep bank than we realized how cleverly had been arranged the plan by the Indians to affect a meeting with the mysterious strangers who had invaded their realm. We followed a wide path that led into the dense forest for a distance of 20 yards and suddenly came upon a small, swift stream that sped through a dark tunnel-like opening under the dense canopy of leaves and branches. As we stared in blank amazement into the impenetrable tangle of vegetation on the other side of the stream, there emerged from the forest four nude, bronze figures, gesticulating wildly and chattering in a strange jargon, which, of course, we could not understand; they were of good build, though inferior in physique to the Nhambiquaras we had seen on the chapadão, and not over 5 feet tall, with long, straight hair, and, remarkable though it is, the tangled hair of two of them was of a decided auburn color. Their bodies were plentifully besmeared with dark bluish paint, applied in queer zigzag designs, and giving a grotesque effect. No wilder scene can be imagined than the quartette of naked, trembling creatures faintly outlined against the dim background of merging shadows and somber green; somehow they seemed to fit into the picture to complete the impression of primality conveyed by the vast wilderness of the Brazilian hinterland. Our captain had held up bunches of bright red beads and started to wade into the stream toward them, but they immediately withdrew into the thick cover, so he came back. A moment later they reappeared and again began talking and waving their arms; by signs we tried to induce them to come nearer and to assure them of our peaceful intentions. Finally, after a pow-wow with his companions, one of their number approached to the margin of the stream and held out his hands. He then pointed to one of our men and motioned for him to take off his clothes and come over with the presents, which was done; the Indian grabbed the trinkets from the native's outstretched hands, gave him a violent push back, and fled to his companions. This was repeated a number of times. Then we refused to permit our man to go farther than the center of the stream—the water was nearly up to his chin—and after lengthy entreaties the Indian waded out and met him half way. We laid out an attractive assortment of beads, machetes, hatchets, and bright-colored trinkets on our side of the river and, retreating 10 or 15 feet, with extended arms invited the Indians to come over. Slowly they came, apparently with many misgivings. We approached them in a friendly manner; they made no attempt to flee, but cast meaning glances behind them where, obviously, an armed force was concealed nearby to protect them in the event that our actions aroused suspicion. The chief was an intelligent fellow; his first deed was to enact before our eyes a drama that we shall never forget. Assuming a rigid pose, he pointed straight in front of him with one hand, as if taking aim; then with a sudden "pong" he clutched at his breast and fell upon his knees; gradually sinking to the ground, where he lay moaning. We understood the accusation; one of his tribe had been shot to death by our people, probably by a rubber collector farther down the river; that was the reason why they had mistrusted us. We showed them how to use the machetes and hatchets, and they seemed delighted; but when we demonstrated the use of matches their joy knew no bounds; they yelped, danced, made weird grimaces, and tried to set the trees and bushes afire, like so many monkeys. Finally, upon our urgent invitation, the chief shouted a guttural command, and three more savages appeared instantly and joined the group, making seven in all; the late arrivals were also treated in a generous manner, and then we withdrew to our boat. Before leaving, however, we promised to return and bring more machetes and matches, which they seemed particularly to appreciate, and they in turn promised to have the bench in the palm-leaf shed heaped with bows and arrows and other things of their making, promises which were religiously kept on both sides.

With the exception of some tedious portages around various rapids the party met with no difficulties on their way down the Gy-Paraná. Camps of rubber gatherers were frequently passed, some furnishing stopping places for the explorers at night, and the party finally reached the port of Calama on the Madeira River, where they were entertained by the owner of the rubber camps until a river steamer stopped at the port on her way down to Manaos, where Mr. Miller again joined the main portion of the expedition. The article is replete with interesting information anent the fauna and flora of the country, and has incidental descriptions of various Indian tribes with which the party came in contact which are valuable from an ethnological viewpoint.

The Pitanga, a Valuable Fruit of Brazil, is the subject of an interesting article in the April number of the Journal of Heredity (Washington, D. C.), contributed by A. D. Shamel, physiologist, and Wilson Popenoe, agricultural explorer, both of whom are connected with the Bureau of Plant Industry of the United States Department of Agriculture. During a visit to Brazil, made by these gentlemen in 1913–14 primarily for the purpose of studying the navel orange in its native home, Bahia, it seems that they were particularly impressed with two native fruits which were found to abound in that section. One of these, the jaboticaba, was the subject of an article in the July, 1914, number of the Journal of Heredity, written by Mr. Popenoe, and reviewed in the March, 1915, number of the BULLETIN; the other is the pitanga, the subject of the article under consideration. For the benefit of those who have never tasted the delicious pungency of this tropical fruit the following somewhat copious excerpts from the article are reproduced:

"It is said," writes Padre Tavares, "that the pitanga dropped from the hands of nature while she was at play one day, and became at once a charm to the eye and a delight to the palate. Each fruit is a glowing ruby, suspended by a delicate stem amidst the cool, green leaves of the pitanga tree, a challenge alike to the covetous eyes of children and of birds; nor can the decrepit old man, bowed down with the weight of years, escape its attractions, for he seats himself beneath its shade to meditate upon the eternity which is approaching. Surely, Brazil does not have to envy Europe her cherry trees, bending in May under the weight of their ruby fruits; our pitangas surpass them both in beauty and in taste."

These lines from one of the ablest of living Brazilian naturalists testify to the esteem in which the pitanga is held throughout those parts of Brazil in which it is found, and indicate something of the beauty of this fruit—rare as yet in most other tropical and subtropical countries, but worthy of extensive cultivation.

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Of the many interesting plants found in connection with the culture of the navel orange at Bahia, few were so conspicuous and none so interesting as the pitanga, *Eugenia uniflora* L., of the Myrtle family. Many of the roadways in Cabulla and other navel-orange districts of Bahia were found to be bordered on either side with beautiful and well-kept hedges of this plant, as were the driveways or walks leading to the

Courtesy of The Journal of Heredity.

THE PITANGA—A TROPICAL RIVAL OF THE CHERRY.

Cherries fail to grow well in the tropics, but Brazil has a fruit which might largely take their place. This is the pitanga, a member of the Myrtle family, whose beautiful red berries possess an aromatic pungency almost unknown in the fruits of cooler climates.

residences of many orange growers, which are usually set back some distance from the road. Frequently pitanga trees are grouped near the houses, furnishing an abundant supply of fruit for home use. The general cultivation of this plant among the orange groves of Bahia, both as an ornamental and for fruit production, suggested its possible use for similar purposes in the orange-growing districts and warmer portions of the United States.

The pitanga, as usually seen, is a broad, compact shrub, but occasionally it forms a slender trunk and becomes a small tree up to 30 or 35 feet high. Its foliage is deep green and glossy, the new growth of a rich wine color. The flowers, which are about half an inch broad, have four white petals, with a tuft of stamens in the center, and are delightfully fragrant. They are produced singly on slender stems about an inch long, and are followed by bright crimson fruits of the shape of a small tomato, deeply ribbed, about an inch in diameter, with a thin skin and melting, juicy flesh of aromatic, spicy flavor, comparable to none of the temperate fruits but somewhat resembling other members of the Myrtaceæ. The single large seed, about the size of a cherry stone, lies in the center of the fruit and is easily removed.

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The pitanga is indigenous in Brazil, extending over a wide area. Prof. J. S. Tavares states that it is found in the States of Rio de Janeiro, Parana, Santa Catharina, and Rio Grande do Sul, where it grows along the banks of watercourses and rivers, and in the edges of the forest. It is common in cultivation throughout many other sections of the country. It is interesting to note that Thomas Green, in 1823, listed the pitanga as a "native of Goa in the East Indies." Goa is a small Portuguese colony on the western coast of the Indian Peninsula, and during the early days of Portuguese colonization there was an interchange of economic plants between this colony and the Portuguese possessions in America, resulting in the cashew, the guava, and other American plants becoming thoroughly established in India, while the mango, the carambola, the jak, and other oriental fruits were transferred to Brazil. Quite probably the pitanga was carried to Goa along with other Brazilian plants, and Green took it to be indigenous. Many of the citrous fruits which were established in Brazil by the Portuguese may also have come from Goa by way of Portugal.

The name pitanga, by which this fruit seems universally to be known in Brazil, is undoubtedly of Tupi origin. The Tupi Indians inhabited a large part of Brazil at the time of the discovery, and the names which they gave to many indigenous plants have persisted to the present day, though their meanings have in may cases become obscure. Martius states that pitanga is derived from the Tupi verb "piter," to drink, and "anga," odor or scent; one may assume, therefore, that the name was given in reference to the characteristically aromatic juice of the fruit.

In other countries the culture of the pitanga is generally very limited. No references to its culture at Goa have been found in recent literature, but we may presume that it is still grown in that region. It is cultivated in northern India at the botanic garden of Saharanpur, and is offered in the catalogue of this institution under the name of "Brazil cherry," but the statement is made that it does not fruit abundantly in that climate. It is grown in Ceylon, where, according to Macmillan, it is called Goraka-Jambo. * * * It is said by Wilder, who calls it the "French cherry," to be a common garden plant in Hawaii. In French it is generally called cerise de Cayenne, or Cayenne cherry. Dr. Trabut states that it would rapidly become popular in Algeria if it produced more abundantly, having been found to be quite hardy along the coast. Emile Sauvaigo, another French writer, states that it is the commonest tropical fruit cultivated in the vicinity of Algiers. He gives it the common name of cerise carrée, as well as that applied by Trabut. In Cuba it is occasionally seen in gardens, and is called cereza de Cayena. In the United States its culture is limited to Florida and California, but it is grown very successfully in both these regions. In

Courtesy of The Journal of Heredity.

PITANGA HEDGES ALONG A BRAZILIAN ROADWAY.

This scene near Bahia, Brazil, shows one of the best uses of the pitanga—to form a hedge. But it is not limited to this use, for it makes a shapely tree, and bears even more heavily when planted alone. In northern climates it might be used as a pot plant and produce its strikingly beautiful berries indoors. It is remarkable for the rapidity with which it develops its fruit, which in the Tropics is sometimes ripe within three weeks from the appearance of the flowers. (From the Journal of Heredity, April, 1916, number.)

1887 P. W. Reasoner wrote: "The tree is quite frequently met with in Orange County and middle Florida, and is gaining in favor as a fruit-bearing plant." At the present time it is common in gardens along the east coast, especially in the vicinity of Miami, where the fruit has recently commenced to appear in the market, and on the west coast from Fort Myers northward. After the plants have attained the requisite age they fruit abundantly, often producing two crops a year.

At Bahia, Brazil, the pitanga was found much more commonly as a hedge plant than in any other form, but such plants produce much less fruit than those allowed to develop naturally. The largest trees seen in Bahia, at the Roça Coronel in the suburb of Roma, were about 15 feet high with trunks 6 inches in diameter. At Agua Comprida, near Bahia, on the ranch of Col. João de Teive e Argollo, we found a magnificent specimen nearly 35 feet high, with a trunk 15 inches in diameter. These trees, in December, which is one of the spring months in Bahia, were loaded with their bright red fruits. Considerable variation was noted on different trees in regard to quantity, shape, size, and color of fruit. Dr. V. A. Argollo Ferrão, to whom we are indebted for invaluable assistance during our stay in Bahia, stated that he had frequently observed this variability of individual trees and suggested the possibility of improving the pitanga by careful selection of seeds. But selection would not be practicable at present, since seed propagation is the only method generally employed in Brazil. By planting seeds from trees which bear abundantly and whose fruits are of good size and quality, marked improvement could probably be secured. This has recently been illustrated in California with the feijoa (*Feijoa sellowiana* Berg), a plant belonging to the same family; seeds from selected fruits have produced much better results than those taken without regard to parentage.

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Bahian pitangas were found usually to be slightly less than an inch in diameter, flattened, deeply ribbed, and commonly containing one seed with a thin, gray seed coat, which becomes papery when dry and is easily removed. The size of the seed varies greatly in fruits from the same tree and is not always the same in proportion to the size of the fruit. Several large fruits were found which had comparatively small seeds and a large amount of soft, juicy, spicy pulp.

The uses of the fruit are numerous. As a fresh fruit, when fully ripe, they are delicious, though sometimes the novice finds their strongly aromatic, almost pungent, flavor peculiar and even disagreeable. The jelly which is made from them possesses a character all its own and vies with guava jelly in popularity among Bahians. It impressed us as being a product of unusual merit. Pitanga sherbet is an especial favorite in Bahia and is regularly served in all the cafés. It is of a beautiful deep salmon color and delicious in flavor. A liquor is sometimes prepared from the fruit, and also sirups and wines, which are considered by the Brazilians to have medicinal value, being stomachic and facilitating digestion.

Aside from the fruit itself, the foliage is extensively utilized by the Bahians, being highly esteemed for decorative purposes. In the notes made by one of the writers on Christmas Day, 1913, the following paragraph appears:

"The people use pitanga branches to decorate carts, animals, street cars, and houses. The leaves are scattered over the floors of the living rooms in the houses, and when crushed under foot give off a delightful, refreshing, pungent aroma."

The use of this plant for decorative purposes at Christmas time is probably more extensive in Bahia than is the use of holly in the eastern United States; it seemed to be, in fact, the most popular decorative plant of the region. During the holiday season bunches of pitanga branches were offered for sale by venders on almost every street.

In the United States the fruit is usually eaten while fresh, or is made into jelly. Pitanga sherbet should be tried by all who can obtain the fruits, however, and other uses will doubtless present themselves as the fruit becomes better known in this country.

The Cathedrals of the New World, in the French edition of the BULLETIN, in the second installment of the series deals with these ecclesiastical edifices in Ecuador. The following brief excerpts in English will serve to explain the accompanying illustrations:

The archdiocese of Quito has six suffragan bishopries, viz, Guayaquil, Cuenca, Ibarra, Loja, Porto Viejo, and Riobamba. Quito was a bishopric as early as 1545, and was raised to an archbishopric in 1848. The cathedral, although not pretentious in its general appearance, follows the rules of a type of architecture quite general in Ecuador. There are no tall, slender spires which pierce the sky; its construction is solid and massive, having as a feature the Moresque dome so frequently seen in continental as well as in Spanish colonial ecclesiastical edifices. This solidity of construction has often been the means of saving from destruction the buildings which adhered to this style of architecture in a country frequently visited by devastating earthquakes.

WOOD MODEL OF THE CATHEDRAL OF CUENCA, ECUADOR.

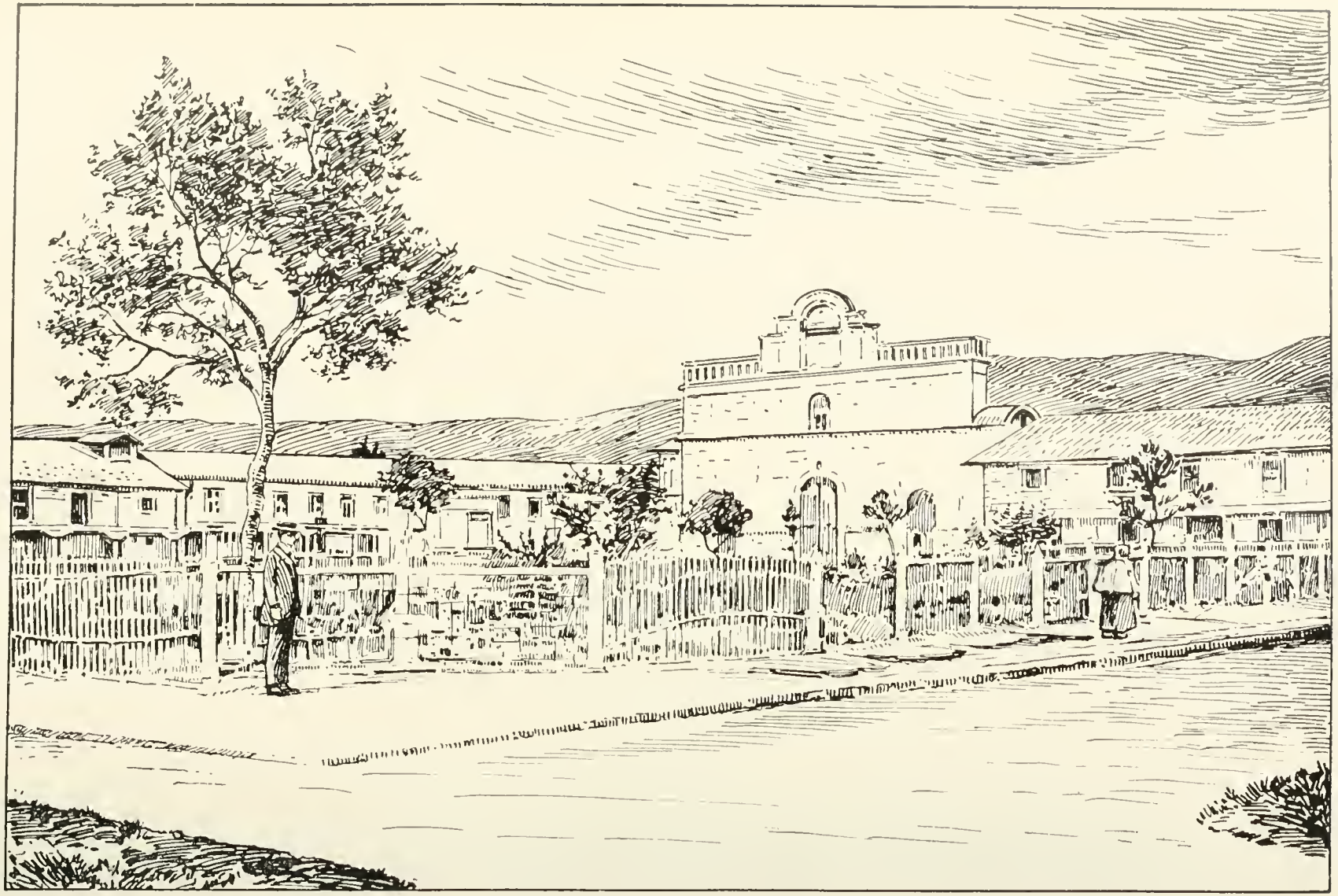
If the religious edifices take first rank among the public structures of Ecuador it is because there were few skilled architects to be found in the civilian classes of this new world; but in the cloisters of the monasteries there were often found priests or brethren of the various orders who possessed a competent knowledge of the building art, an art which in those times was often studied as a diversion from their stern religious duties. It was therefore the Spanish Moresque style, modified by local conditions, which dominated, the Gothic style having by then fallen into disuse not only in Spain but throughout Europe generally. It is therefore only occasionally that one finds the pointed arch and other Gothic features in a few of the church buildings of the country; but there is nothing of the kind in the cathedral at Quito. The material of which it was built was taken from the rich stone beds located in its immediate vicinity. It has a magnificent portico and vestibule of beautiful marble, the entrance stairway being of the same material, while the building is set in a fine tropical garden. Unique among its interior decorations is a commemorative tablet on which are inscribed the names of the French and Spanish scientists who in 1736–1741 measured the arc of a degree of the meridian of Quito in order to determine the exact shape of the earth.

CATHEDRAL OF GUAYAQUIL.

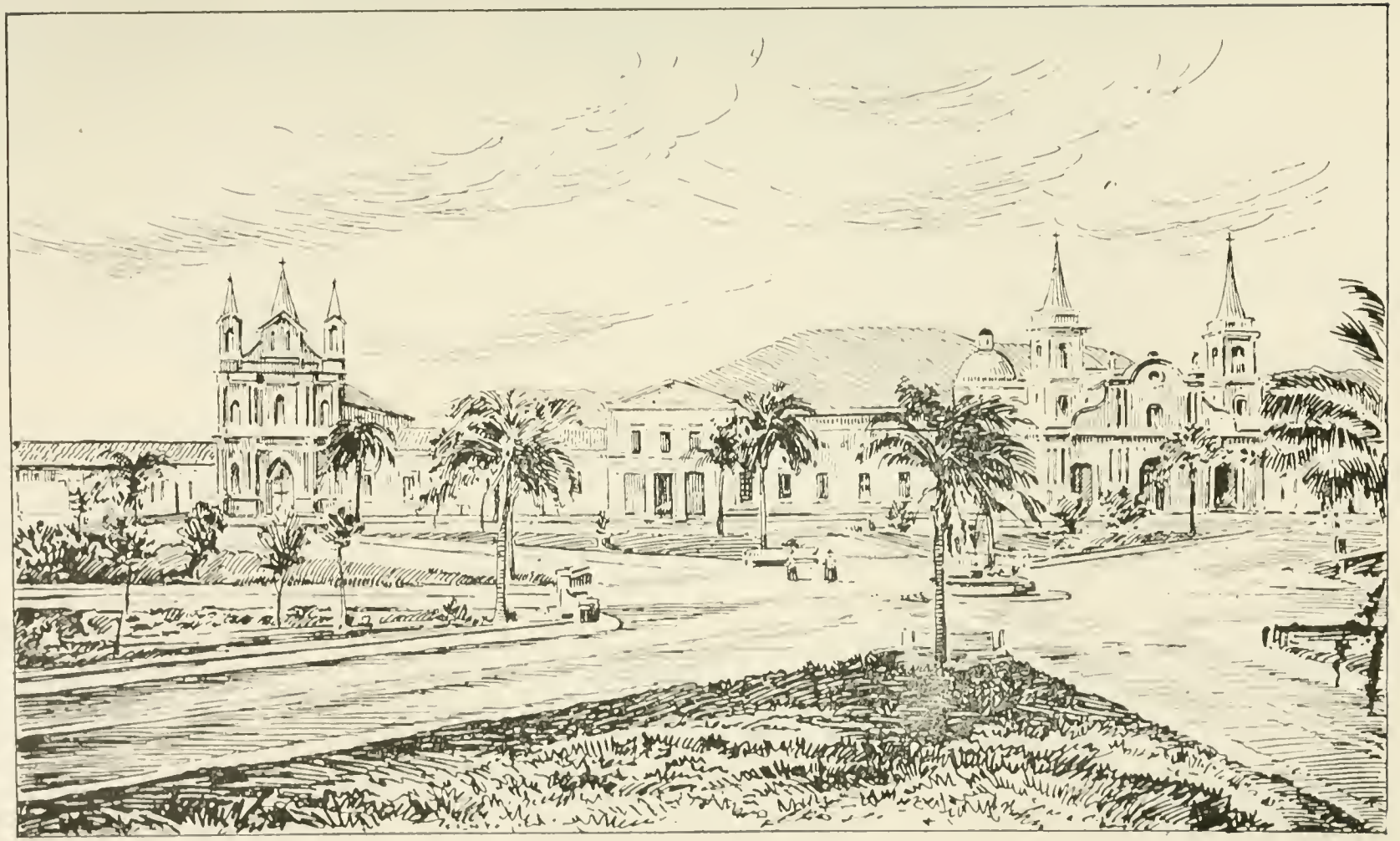
CATHEDRAL OF PORTOVIEJO.

CATHEDRAL AT QUITO, ECUADOR.

CATHEDRAL AT RIOBAMBA, ECUADOR.



CATHEDRAL AT LOJA, ECUADOR



CATHEDRAL AT IBARRA, ECUADOR.

Because of the frequent seismic disturbances, most of the larger buildings of Guayaquil are constructed of wood. The cathedral is no exception to this rule, but nevertheless it has a splendid and imposing appearance. In this structure are to be found the pointed arches, the triangular pediments, large towers, and bold spires of Gothic architecture.

Cuenca, a center of early Ecuadorean culture, was raised to the rank of a bishopric in 1786, and it was not long before a splendid cathedral was erected, an edifice which will compare favorably with any structure of its kind in South America. This monumental pile, with its splendid domes, its bold towers, its sculptured façades and windows, was mainly built of marble from the renowned quarries of Sayaussi.

The bishopric of Riobamba dates from 1863. The city has a remarkably beautiful setting, being surrounded by great mountain peaks whose summits are covered during all seasons by their eternal mantels of snow. The façade of the cathedral is constructed of blocks of polished stone taken from the ruins of the ancient city located there. It is typically monasterial in its architecture.

Loja was raised to a bishopric in 1863, and its cathedral is of comparatively recent construction. It was built almost entirely of stones from the ruins of the ancient city of the same name, founded in 1553 and subsequently destroyed by an earthquake.

The bishopric of Ibarra was established in 1862. The accompanying illustration shows the cathedral and the bishop's palace, the two structures being located in a wonderful setting of tropical trees, shrubs, and flowers.

Porto Viejo was not made a bishopric until 1871, and its cathedral of very recent construction was not entirely completed when the photograph herewith reproduced was taken.

The Mining Industry of Peru, by Joseph T. Singewald, jr., and Benjamin LeRoy Miller, in the May 13 number of the Engineering and Mining Journal (New York), is a comprehensive sketch of the most important of Peru's industries, embracing a description of the topographical features of the country, a short sketch of the history of mining, and a brief review of the various mineral deposits at present under exploitation. Mr. Singewald is associate professor of economic geology at Johns Hopkins University and Mr. Miller is professor of geology at Lehigh University. Last year these gentlemen made an extensive tour of South America, visiting practically all of the mineral zones of the continent, and are therefore equipped with first-hand knowledge of conditions. The following paragraphs, omitting the historical matter and also that dealing with the labor problem, its character, cost, etc., cover the salient features of the article:

The mineral production of Peru has been increasing rapidly in recent years, owing to the large-scale developments instituted by foreign capital, which has been chiefly

Courtesy of Continental (New York).

THE OIL WELLS OF LOBITOS, PERU.

Upper: Some of the Lobitos oil wells are on the very edge of the sea shore, and the cost of loading vessels is reduced to a minimum, since the pipes through which the oil is pumped to the tank steamers need cover only a very short distance, as shown in the picture. Lower: Showing the older oil fields of Lobitos. A little to the south of these are the oil wells of Talara, and still farther south those of Negritos, all being on the coast.

American and English. The output of the various mineral products in the order of their value is given for the year 1913, being the latest complete statistics available: Copper, 27,776 metric tons; silver, 299,132 kilograms; petroleum, 2,071,112 barrels; salt, 24,432 metric tons; coal, 273,945 tons; gold, 1,429 kilograms; vanadium ore, 3,000 tons; lead, 3,927 tons; wolfram ore, 193 tons; borax, 2,001 tons; bismuth, 25,300 kilograms; mercury, 460 kilograms. The total value of these products in that year was over $23,000,000. It may readily be calculated that copper constitutes nearly two-fifths of the value of the total. Moreover, 80 per cent of the copper comes from the one Department of Junin and 14 per cent from the adjoining one of Lima, from mines that are chiefly owned and operated by American capital. These are the mines of the Cerro de Pasco, Morococha, and Casapalca districts. Silver ranks next in importance to copper and contributes one-fourth of the value of the Peruvian mineral production; silver owes its position almost entirely to the fact that the Peruvian copper ores are argentiferous and the great output of copper has resulted in a large silver production. Thus 81 per cent of the silver comes from the same two departments and from practically the same mines as does the copper, and is hence also chiefly the result of American capital. There is, however, another important silver-producing Department, that of Ancachs, adjacent to Junin on the north, which contributes one-tenth of Peru's silver output, chiefly from argentiferous lead ores. This Department is characterized by a great number of comparatively small producers, both native and foreign. The third most important mineral product of Peru is oil, the value of which is over one-fifth that of the total mineral production. This comes from the extreme northwestern corner of the country, from the Departments of Tumbes and Piura, and the industry is chiefly in the hands of English capitalists.

The nonmetallic mineral products of Peru consist of oil, coal, salt, and borax. The value of the oil output is twice that of the others and is increasing at a greater rate than the others are or can be expected to increase. The value of the metallic products is twice that of the nonmetallic production.

The fact that the three principal mineral products of Peru, copper, silver, and oil, contributing 84 per cent of the total value of the mineral output, are produced to such a large extent by outside capital emphasizes the dependence of that country upon foreign capital for the development of its mineral wealth. The two principal products, copper and silver, contribute 62 per cent of the total, and these industries are dominated to such an extent by American capital that, with the vanadium, coal, and other minor American mining interests included, it is evident that Peru owes one-half of her mineral production to American capital. This is interesting and important, as in no other foreign country does American capital take such a prominent rank. * * *

The importance of the coal-mining industry is due largely to the coal-mining activities of the Cerro de Pasco Mining Co., which uses the coal at its smeltery at Fundicion. Over 95 per cent of the total coal production comes from this company's mines in the Department of Junin. * * * Small quantities are also produced for local use in the Departments to the north of Junin up to and including Cajamarca.

The productivity of the Tumbes oil field in the extreme northwest corner of Peru has been a great boon to much of the west-coast country. There are two refineries in the region, one at Talara and the other at Zorritos, the products of which are used not only in Peru, but in Ecuador and to a large extent in the Chilean nitrate fields, and even find their way as far as the United States and Japan. The Peruvian Steamship Co. and the Central Railway of Peru both use oil-burning engines. The fuel problem has been met in many of the Andean mining camps in recent years through the installation of Diesel engines, and Peruvian oil has been the fuel generally used. There has been some drilling in the Department of Puno, north of Lake Titicaca, and oil has been found, but apparently the prospects have not been sufficiently encouraging to warrant overcoming the transportation difficulties of that section.

The borax industry is in the hands of Borax Consolidated (Ltd.), an English company which has a monopoly of the entire South American borax production. The deposits occur in Lake Salinas, 35 miles east of Arequipa, between the two volcanoes Misti and Ubinas, at an elevation of about 13,000 feet. The mineral is the sodium-calcium borate, ulexite, which occurs as a layer from 10 centimeters to 1 meter in thickness, but with an average thickness of one-half meter, under a barren layer from 1 to 2½ meters in thickness. The boric-acid content of the crude material is about 31 per cent, which is increased by dehydration to 47 per cent or more.

The salt industry of Peru has been a Government monopoly since 1896 and is administered under Government supervision by a company known as the National Salt Co. Under the law salt deposits are not denunciable, and those under private ownership must sell their product to the Government at fixed prices. The profits of the Government from this monopoly amount to over a half million dollars annually.

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The mining laws of Peru are liberal and offer encouragement for the development of the mineral resources of the country. For the purpose of administering them, the country is divided up into distritos minerales that correspond practically to the provinces into which the departments are divided for general administrative purposes. A mining claim is known as a pertenencia and has an area of 200 by 100 meters, or 2 hectares, except in the case of coal, oil, gold placers, and saline deposits, for which the unit claims have an area of 200 by 200 meters, or 4 hectares. The unit claim for saline deposits is known as the estaca. The limits of pertenencias are vertical.

In denouncing mineral lands, a group of claims of not more than 60 pertenencias may be taken—known as a concesion—for registering which the fee is 5 soles, or $2.40 gold. But one is not limited even to 60 pertenencias, as a single individual may denounce any number of concesions, so long as he pays the fee of 5 soles for each group. The payment of this fee gives five months' possession, at the end of which period title to the property must be applied for. The pertenencias are then surveyed and laid off and the titles drawn up and submitted for approval to the Ministerio de Fomento. When they are obtained, the pertenencias are subject to an annual tax of 3 Lp. (Libra peruana) about $14—payable semiannually. If there is a lapse of one and one-half years in the payment of this tax, the claims are again denunciable.

There are certain desirable features in these laws. Their great liberality in not limiting the amount of ground that may be denounced enables the discoverer of a mineralized area to protect himself while he locates the ground that he deems most valuable. On the other hand, the tax placed on each claim after the title is obtained is not high enough to make it a burden to anyone who really considers the claims of value, while it is high enough to prevent the holding of extensive tracts of land in promising regions merely for the purpose of excluding others. The necessity of approval by the Ministerio de Fomento also makes it possible to protect the country and the people from any such monopolization. Water powers for mining enterprises may be held without the payment of any taxes whatever.

The National Service School for Women is the subject of an article in the June number of the Spanish edition of the BULLETIN, an English version of which is as follows:

Just beyond the city limits of Washington, the Nation's capital, there was officially opened on May 1 by the President of the United States a National Service School military encampment with 200 women in attendance—the first of its kind in the world—which it is believed will inspire the founding of other schools throughout the country where women can fit themselves for the part they must play in the national service of good citizenship and patriotism. The main object of the school is to give an opportunity to American women to

Photograph by Leaman.

GENERAL VIEW OF THE WOMEN'S NATIONAL SERVICE SCHOOL AT CHEVY CHASE, A SUBURB OF WASHINGTON, D. C.

Photograph by Leaman.

SETTING-UP EXERCISES AT THE CAMP.

Photograph by Leaman.

THE OPENING OF THE NATIONAL SERVICE SCHOOL.

Upper picture: President and Mrs. Wilson reviewing the women soldiers. At the extreme right of this picture is shown Maj. G. P. Ahern, one of the organizers of the camp. Lower picture: Soldiers saluting the flag. The parasols shown in the picture, it should be explained, are held by the spectators and not the soldiers.

acquire sufficient special training to be of national service in the event of war and other disaster. The school is held in the open air, and the resident students live in regulation Army tents. It is in the nature of a camp, being conducted along military lines, with set schedules of classes, etc., for resident and day pupils.

The classes and special courses are given during the morning hours, and the afternoon sessions of the school are devoted to conference meetings and lectures by noted men and women who are experts in the topics discussed on questions of national defense, food conservation, and American history. The compulsory courses of study, which are under the direction of American Red Cross nurses, with the cooperation of the Surgeon General's Office of the Army, include lessons in surgical dressings, scientific bed making, dietetics, and cooking for the sick. A regulation Army field diet kitchen is set up on the grounds, and demonstrations in the proper preparation and cooking of foodstuffs is given daily. There are five elective courses, which embrace instruction in the following subjects: No. 1. Special preparation in event of national calamity or war, which is given by American Red Cross nurses and instructors, which includes home care of the sick, lessons in hygiene and sanitation, and some of the principles of first aid. No. 2. Knitting and plain sewing. Knitting includes making of socks, mufflers, and other necessities, according to standard requirements. Plain sewing includes making of patterns of garments adopted by American Red Cross for relief work, musket covers, etc. No. 3. Signal work; under direction of military experts there is practice in heliographing, wigwagging, cipher study, code work, plain and wireless telegraphy. No. 4. In this course simple bandaging, signaling, and the making of Army kits is taught. No. 5. Military calisthenics, which includes setting-up exercises, drilling, and marching.

The National Service School is open to all native-born women over 18 years of age. No student is permitted to live at the camp who does not present a certificate from her physician that she is able physically to endure the out-of-door life and camp routine. A physician and trained nurse is in constant attendance, and a Red Cross relief station is set up on the camp grounds, every precaution being taken for the health and comfort of the students. The courses are two weeks long, and no student is allowed to enroll for less than the whole period. An enrollment fee of $1 is required from all students, and resident students must pay $1 per day for maintenance and quarters. There is no charge for the classes. An inexpensive uniform of khaki is worn by the students, personal baggage is limited to a handbag and suitcase, and the care of the tents is in charge of the occupants, under the daily supervision of regularly appointed inspectors. The sanitation and health rules and regulations, laid down by experts, are rigidly enforced by the officers in command.

Photograph by Leaman.

INSPECTION OF THE NATIONAL SERVICE CAMP.

The camp is conducted entirely by women, and the leading officials are chosen from the wives of the military officers. In the upper picture the camp is being inspected. In the center, the commandant is giving instructions to the day guards. In the lower, one of the companies is being inspected by the commandant.

Photographs by Leaman.

FIRST-AID CLASSES AT THE SCHOOL.

The object of the school is to instruct the women of the United States in the duties which they would be called upon to perform in case the country was attacked by a foreign foe, but no attention is given to the handling of firearms. The upper photograph shows the class receiving instruction in first aid to the wounded, and the lower in the preparation of bandages and surgical dressings.

Photographs by Leaman

INSTRUCTION AT THE SCHOOL.

The upper picture shows the class that was selected to receive instruction in wireless communication. The lower shows members of the class who have taken up telegraphy.

and there is a daily inspection of tents and grounds. The students are divided into companies of 50 women, each under the command of a captain and two lieutenants, who are selected from among their number.

The program of the day reveals the military system under which the school is being conducted and is as follows: Reveille, 6.30 a. m.; military calisthenics, 7 to 7.30 a. m.; breakfast, 7.30 a. m.; classes, 8.30 to 12 m.; dinner, 12 m.; lectures and conference sessions, 2 to 4 p. m.; recreation and leave, 4 to 6 p. m.; retreat, 6 to 6.15 p. m.; supper, 6.15 p. m.; roll call, 9 p. m.; taps, 10 p. m. (lights out and quiet in camp).

The organizers of the National Service School are very much gratified at the enthusiasm with which the students have entered into the work of the camp and the success which has resulted from their efforts. The women students voluntarily entered the service and pledged themselves to remain during the course of two weeks. The school is to be open during the summer months, an entirely new class of students being enrolled every two weeks to learn, by practical experience, something of the discipline which the Government holds over its Army and Navy, to say nothing of the way the women can prepare themselves to look after the sick and wounded in time of an international strife. The instructors at the camp also are volunteers, and the garments which have been made in the sewing class, such as aprons, robes, pajamas, kimonas, bed coats, wraps, and bed socks; and in the knitting class, such as socks, sponges, and mufflers, are to be used by the American Red Cross in its work. Probably the most interesting class work was that in the signaling, and the women have picked up the codes in a remarkably short time. In addition to the wigwag and semaphore signaling, a Regular Army service wireless station is set up in the camp in charge of the chief electrician of the United States Navy. In addition, a number of the women have taken up land telegraphy and there is a miniature telegraph line, with real poles and cross arms, on the grounds. A detail of Regular Army cooks and bakers set up a huge oven in the camp and the students were instructed in every detail of the baking. The allowance to be spent for food is 32 cents per person per day and the purchase of material is done by the Commissary Department of the Navy, and the cooking is supervised by one of its chief cooks. At the end of the two weeks, service examinations are held by the instructors and those students who pass with a good rating are supplied with certificates of graduation.

Lectures on national preparedness, the medical service, good citizenship, and other subjects of interest, were delivered by prominent men and women of the country, the Director General of the Pan American Union, Mr. John Barrett, addressing the students on the subject of "Pan American Preparedness."

BOOK NOTES

Bolivia. By Paul Walle, commissioned by the French Ministry of Commerce. Translated by Bernard Miall. Charles Scribner's Sons, New York. 407 pages, 62 illustrations, and several maps. Price, $3.

If we examine a modern map of South America it is readily seen that man is attacking the interior from many points of the compass, endeavoring to penetrate farther into the primeval forests; to climb higher up the mountains or down deeper into the mineral kingdom. Governments and corporations are sending specialists to the remotest regions, and when the French Minister of Commerce a few years ago selected Paul Walle and started him forth to the heart of South America, to study and write about Bolivia, a wise choice was evidently made.

Some of the results of this distinguished investigator's labors are interestingly related in a new volume entitled, "Bolivia." The book is one of the most entertaining and authoritative works on the Republic of Bolivia that has appeared in recent or former years. The people who make the country's activities, the resources, railways and rivers, mining industries, rubber forests, agricultural enterprises, and an array of other important and interesting topics are ably treated. When it is shown that these chapters have been prepared after long and serious travel and investigation, the reader feels assured that he is following one who knows whereof he speaks; and furthermore, one who does not let enthusiasm on one hand overbalance fair judgment on the other.

In his introductory remarks M. Walle says:

"If there is one country among all others concerning which our knowledge is scanty and even at fault, that country is Bolivia, although the Republic is possessed of innumerable resources, and offers many advantages to men of action who have capital or labor to invest.

"Hitherto, indeed, the territory of Bolivia, the riches contained in her soil, and the possibilities of her future have been all but unknown. This ignorance is due to a lack of that practical publicity which might have made known to the outer world those incomparable economic resources which, in the absence of labor and capital, are as yet unexploited.

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"Situated in the center of South America, Bolivia covers an enormous territorial expanse; it comprises tracts which produce the fruits proper to all climates, from the potato, which is found even in the regions of snow, to quinquina, rubber, coca, coffee, cocoa, and the sugar cane, which can only be grown under the sun of the tropics.

"In the eyes of many persons Bolivia appears as a remote and inaccessible country; and the impression of its extreme remoteness is increased by the fact that the disastrous war of the Pacific completely deprived the country of its littoral. In reality this littoral, which lay at a great distance from the really populous regions of the Republic, had played but a very insignificant part in its development; and this fact was until lately a considerable obstacle to the economic progress of the country, despite the improved administration and the profound peace which Bolivia has for the last twelve years and more enjoyed.

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"From our recent sojourn among the men and things of Bolivia we brought away a marked impression that the nation is most certainly entering upon a period of intellectual and economic transformation. Its industries are being developed, and its wealth, hitherto almost unexploited, is daily attracting the attention and cooperation of external capital. By this process of evolution, which is slowly but surely going forward, the country is already deriving substantial profit.

A BOLIVIAN GOLD NUGGET (ACTUAL SIZE).

This nugget of pure gold, weighing 6,250 grams, or nearly 14 pounds, was recently found in the placer mine belonging to Col. Benedicto Goytia, located about 7 kilometers (less than 5 miles) from La Paz, on the Chuquiaguillo River. The nugget has a maximum diameter of 13 centimeters (5.12 inches) and varies from 3 to 8 centimeters (1.2 to 3.15 inches) in thickness, and is valued at a little over $4,000 United States gold. It is said that another nugget, valued at $4,500, was found in the same river by an Indian during the seventeenth century and sent to the Spanish Crown. A facsimile of this nugget has been preserved in the Royal Museum at Madrid. Much of the gold found in the possession of the Incas at the time of the Spanish conquest is said to have been obtained from the Chuquiapu and Chuquiaguillo Rivers.

"The fact that its bonds of its first European loan, which were issued in 1910, enjoy the favor of French investors and are frequently quoted above par, is proof of the confidence which Bolivia has begun to inspire in the world of credit. The rise in the prices of tin and copper, to speak only of these two items of Bolivian exportation, which has now been maintained for nearly two years, has greatly contributed to the improvement of the economic situation."

The author then proceeds to analyze the various routes to Bolivia, devoting considerable detail to each one; so that those who contemplate a trip to that country will be able to obtain from the book practically all of the information desired. In speaking of the less frequented route from Buenos Aires via La Quiaca, and the stage journey of 125 miles between railheads, M. Walle says:

"The diligence rolls over hill and through valley from sunrise to sunset. One circumstance will strike the traveler unused to Bolivian travel; he will see two young Quechua Indians running, one on either side of the mules, which are harnessed in couples; they are armed with short whips adorned by numerous rings of iron, which they continually crack, thus exciting the mules; or from time to time they throw small stones at those beasts which are not within reach. At every step they leap over rocks and boulders, which abound on the highway, sliding or slipping on the hardened snow, gesticulating, shouting, and whistling in turns.

"One must indeed be, as these Indians are, indefatigable in order to indulge in such violent exercise at an altitude of nearly 10,000 feet, where the least effort may result in mountain sickness. However, these young Indian postilions make nothing of covering the sixty-mile stages as I have described; on arriving at the relay or posting-station they seem barely fatigued, and busy themselves with the baggage."

Other routes to Bolivia are, of course, quicker and made in the comfort of a modern railway car, but the author evidently possessed the wander spirit and chose the Quiaca way as offering facilities for getting into close touch with interior customs and people. He seems to have enjoyed the rough experiences and devotes considerable space to relating these happenings, which will be of special interest to other travelers who, more and more, are inquiring about the overland journey from the Bolivian to the Argentine capital.

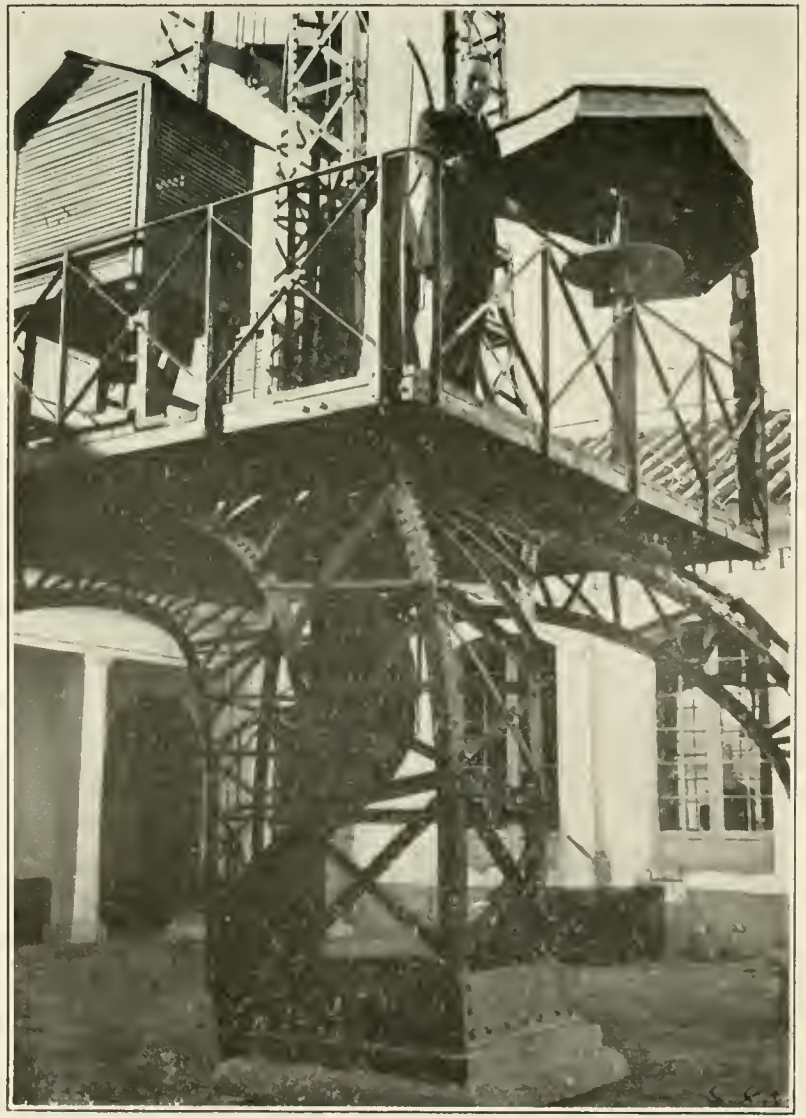
Relative to La Paz and its life and activities we quote from the author:

"La Paz is gradually becoming a comparatively cosmopolitan city. According to the census already cited there were in 1909, 3,357 foreigners, of whom 541 were women, or an increase of 2,273 since 1902. The Peruvian colony is most numerous, with 1,500 persons; next comes the Chilean, with 410; then the German, with 246; the Spanish, with 196; the Italian, with 169; the French, with 154; the Argentine, with 127; the United States, with 86; and the English, with 76. La Paz contains only 131 negroes and a dozen Chinese and Japanese.

"From our own observations we should say that the foreign population living in the capital in 1912 was considerably more numerous than the above figures would lead one to believe. At the time of our visit there were in the city numbers of engineers, capitalists, merchants, and manufacturers who had come to conclude business transactions or to study conditions on the spot, to say nothing of professors, business employees, priests, nursing sisters, etc.

"The trade of La Paz is almost entirely in the hands of foreigners—Germans, French, and English, as regards the wholesale trade. The Germans, whose colony is most numerous and almost entirely commercial, form about 60 per cent of the business population; then come a certain number of French, English, and Italian business houses. The Peruvians are retail traders and artisans; the Italians, retail traders and manufacturers; the English are mostly industrial promoters, managers, etc.

Another region visited by the author and of which he writes most interestingly is that of the Yungas. This part of Bolivia figures conspicuously in the railway de-



THE METEOROLOGICAL OBSERVATORY, SUCRE, BOLIVIA.

One of the well-established scientific institutions of Bolivia is the meteorological observatory located in the grounds of the medical department of the University of San Francisco Xavier, at Sucre. The observatory consists of an iron tower having two stories, the second having an altitude of about 40 feet. It is provided with the most modern meteorological instruments, and for the past 10 years has collected much valuable scientific data concerning the meteorology and climatology of this section of Bolivia. Its able director, Sr. Constant Lurquin, was one of the delegates from Bolivia to the recent Pan American Scientific Congress held at Washington, D C. The picture to the right shows the first story, that to the left the second, seen above the intervening roof.

velopment plans of the Government, and the insight that is here given is worth quoting:

"We have seen that the name of Yungas is given to the low and inclosed tropical valleys which lie to the north of La Paz among the spurs of the Royal Cordillera, between altitudes of 5,000 and 2,500 feet, and whose waters run toward the Amazon by way of its upper affluents. The most interesting are those which are divided administratively into the North and the South Yungas; these Provinces stretch northward as far as the Province of El Beni at the confluence of the Cotacajes and the Altamachi. This is one of the principal highways by which Bolivian rubber finds its outlet to the Amazon.

"The Yungas, part of which we visited, attract the traveler by their reputation of abundance and their proximity to La Paz, for their capital towns are distant only 80 and 93 miles, respectively, but the journey is rather difficult, and the most elementary comforts are lacking. To penetrate this region, which Orbigny compared to a lost Paradise, one is obliged on the first day to cross the huge range of the Eastern Andes, whose summits are clad in eternal snows and whose flanks are teeming with mineral wealth.

"Leaving La Paz by the Via de las Yungas, in the suburb of Santa Barbara, one follows the ravine of Chuquiaquillo, and then, turning to the north, one climbs without a break to the little pass or apacheta of Huaeuyo, 15,338 feet above the sea. This is the highest point on the journey. Thence the track descends, winding through many zigzags, as far as Rinconda; if one wishes to avoid these detours as far as Pongo, one may take the mule track, which is shorter by 3 miles, but the gradient is sometimes as high as 30 in 100.

"On the second day one enters an interminable defile among the mountains; the track is cut in the rock, following all its sinuosities, and is always perched at a height of many hundreds of feet, sometimes as many as 3,000; at certain points it actually overhangs the floor of the valley of Chue'ura at a height of 5,000 feet or more. The Chue'ura is a river flowing into the Rio Coroico, which itself flows into the Rio de la Paz. Toward the end of the second day one begins to notice banana trees and coffee plantations, in a locality named Bella Vista. The plantations of coffee, bananas, cocoa, are continuous all along the valley of the Chue'ura, but they are as a rule quite small plantations. It is only on the third day that one reaches the torrid valley, after three hours of an extremely steep descent, which leads one to the bottom of the Chue'ura Valley.

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"The region of the Yungas deserves to be more frequented than it is by the inhabitants of La Paz, who have every excuse for praising it; the country is incontestably beautiful, and all who make the journey thither retain a vivid memory of it. Sometimes all is of a wild, even savage beauty, whose dreadfulness is happily attenuated by the exuberant vegetation which clings to the flanks of the rocks and masks the profundity of the abysses.

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"Could European colonists settle in the Yungas? We are sure of it. The climate is not an obstacle; it is hot, but not unhealthy. Although there are fevers in the valleys, they respond readily to treatment, and the heights are healthy.

"But it must be understood that as things are at present European immigration is hardly possible; nothing is ready to receive immigrants. Before European immigrants could settle in the Yungas the Government should purchase large tracts of good soil and divide them into colonies, arranged in a certain number of lots. Once on the spot, the colonists should be able to count on the aid and encouragement of the Government during the first few months, as is the case in Brazil. An experiment of this kind might well be tried, for the products of this region will always insure certain profits."

After considering the numerous possibilities for foreign capital in Bolivian development, the author gives interesting data relative to the cost of entering the tin-mining field. Here are his figures:

Form of application, legal publication, and lawyer's costs in connection with securing a concession	$120
Expenses of taking possession	800
Costs of injunction to nullify possible opposition	80
	1,000

Machinery for starting a small tin-mining enterprise costs, according to the author, at the factory approximately $5,000; after this has been shipped to Bolivia and is transported overland to the desired place the first costs are likely to have reached something like $20,000. Added to this expense will be the original cost of the property, which of course may vary greatly in accordance with the probable richness of the deposit and also the location of the property. The author then continues:

"In the first place, are there still deposits so abundant that the capitalist interested in such matters may visit Bolivia without fear of finding everything snapped up, and his comparatively long and expensive journey made in vain? The reply is to be found in the very summary description given in the preceding chapters; but we may without hesitation reply once for all: He may.

"Without reckoning a large number of deposits already known, fresh deposits are being discovered and applied for every moment. During our stay in the mining districts, in the oldest as in the newest, not a day went by but some miner or prospector came to offer some mining proposition to the traveler, for in Bolivia every traveler is a possible capitalist and purchaser.

"The situation of such persons may be of two categories. Either they have applied for claims and assumed possession and find that their resources are coming to an end, exhausted by the small expenses involved by these operations, so that they are forced to seek a partner or a purchaser, or they have not even the £80 or £160 necessary to proceed thus far, but, knowing of a lode, they offer to sell the secret of its position, or hope to find a partner who will provide the cost of application and possession. In either case they are looking for a capitalist; so that it is as a rule very easy to acquire at a bargain a tin mine which it would be profitable to exploit."

Books by Spanish American Authors.

The work which has just been undertaken in Spain by the famous Venezuelan author and poet, Rufino Blanco Fombona, is deserving of the highest praise. This distinguished writer has founded a publishing house in Madrid to print works which the most renowned literary geniuses of Spanish America have produced from the date of the independence era up to the present time. The writings referred to, although well known in the respective countries of their authors, are not easy to obtain, either because of inadequate transportation facilities or for the reason that the small original editions have been exhausted. Hence the difficulty encountered in each of the Spanish American nations when it is desired to correctly gauge the intellectual attainments of the other countries, a difficulty which renders a similar undertaking in non-Spanish-speaking countries well nigh impossible. The Pan American Union has repeatedly called attention to this state of affairs whenever it has been requested to reply to questions concerning Spanish American books and literature desired of it by literary organizations, schools, writers, and students of the Spanish language in the United States. This is one of the reasons which impels us to welcome the advent of the works to which we refer, since in addition to the encouragement they give to Spanish American culture, their function is also to make known and popularize abroad the evidences of that culture which are extremely interesting

and abundant. The collection of books which the publishing house entitled "Editorial-América" has commenced to edit are of three classes covering the subjects of literature, history, and civics. The first are included in the Andres Bello collection, the second in the Ayacucho, and the third in the politico-social science collection. Among the works of the Andres Bello collection the following have been published and sent to us: "Historia de las Literaturas de Grecia y de Roma por Andres Bello" (History of the Literatures of Greece and Rome by Andres Bello); Facundo, by Domingo F. Sarmiento; "La Sensibilidad en la Poesía Castellana por Nicolás Heredia" (Tenderness of Castillian Poetry, by Nicolás Heredia); Poetry, by Manuel Gutiérrez Nájera; "La Literatura Americana de Nuestros Días por F. García Godoy" (The American Literature of our Day, by F. Garcia Godoy); "Páginas Libres" (Free Pages), by Manuel González Prada; "Cinco Ensayos" (Five Essays), by José Enrique Rodó; "Hombres y Piedras" (Men and Stones), by Tulio M. Cestero; "The United States," by José Martí; and "Sangre Patricia" (Patrician Blood), by M. Díaz Rodríguez. In the Ayacucho collection there have been published up to the present time the O'Leary and O'Connor memoirs, and in the politico-social science collection the Diplomatic History of Chile, by Alejandro Alvarez, and the European War, by Orestes Ferrara. As will be seen, the foregoing list of names and titles contains those of many renowned writers in the field of letters, among them being Bello, Sarmiento, and Martí, and while works such as those of O'Leary are considered classics in so far as they concern the history of the emancipation of the Spanish American countries, all of them occupy a prominent place among the poetical and prose writers of the respective nations of their authors. As the books which will soon be published by the house referred to are of the same quality and excellence as those already mentioned, a collection of volumes covering all phases of Spanish American thought in the course of a century will soon be obtainable. The volumes received by the Pan American Union are elegantly printed, and many of them have learned and interesting introductions from the gifted pen of Blanco Fombona. The volumes of the Andres Bello and the politico-science collections are sold at 3.50 pesetas (peseta=$0.20) each; the two volumes of the O'Leary Memoirs, 7.50 pesetas each, and the one volume of the O'Connor Memoirs at 5 pesetas. These books may be obtained from the "Sociedad Española de Librería" (Spanish Library Society), Ferraz Street No. 25, Madrid, Spain.

Die Pflanzenwelt der peruanishen Anden in ihren Grundzügen dargestellt, by Prof. Dr. A. Weberbauer. 8°. 355 p. with 40 full page and 63 text cuts and 2 maps. Published by Wilhelm Engelmann. Leipzig, 1911. Price, 20 marks.

An invaluable work for the botanist. Like most German works of scientific character, this treatise on the flora of Peru goes much into details of technical character and is remarkable for its comprehensive thoroughness. Every phase of the main subject—the plant life of the country—is dealt with, and as necessary adjuncts thereto a study of the orography, hydrography, geology, and climatology of the various regions is presented in the first part of the book. In the introduction, itself divided into two chapters, will be found in the first a very complete historical sketch of botanical explorations in Peru from the time of the old Spanish chroniclers, such as Cieza de León, Gomara, Zarate, Calancha, Garcilaso de la Vega, Antonio de Leon Pinelo, and others, down to the most recent works of Ernst Ule, G. Karsten, and H. Schenck. In addition to the historical sketch there is in the second chapter a very complete bibliography, alphabetically arranged, covering the literature of scientific character which is even remotely connected with the physical characteristics and plantology of Peru. The second part of the work, dealing with the greatly varied botanical formations in related groups, is perhaps the most comprehensive scientific arrangement of the plant life of the country, based on personal investigation and exploration, that has ever been published. The book, while perhaps too technical and detailed to please the general reader, is a most valuable contribution to the scientific knowledge of the world and deserves a place in every first-class research library in the Americas.

Railway Expansion in Latin America. Descriptive and narrative history of the railway systems of Argentina, Peru, Venezuela, Brazil, Chile, Bolivia, and all other countries of South and Central America. By Frederic M. Halsey. . . . New York, The Moody Magazine & Book Company, 1916. 170 (1) p. plates, maps. 8°. Price, $1.50.

Selected Articles on the Monroe Doctrine. Compiled by Edith M. Phelps. Second and enlarged ed. White Plains, N. Y., The H. W. Wilson Company, 1916. xxxiii, 337 p. 8°. Price, $1.00. ("Debaters' handbook series.")

Exporter's Encyclopædia. 12th ed. 1916. Containing full and authentic information relative to shipments for every country in the world. New York, The Exporters' Encyclopædia Company, 1916. viii, 1175 p. 8°. Price, $7.50, including monthly corrections and subscription to the Exporter's Review for the year ending April, 1917.

Panama. A guide compiled by the tourist committee of the Panama Chamber of Commerce. Panama, 1916. 22 p. map. 8°. (A guidebook to Panama city.)

Export Trade Suggestions. Extracts from reports of American consular officers and data from other sources dealing with the promotion of American trade. Washington, Bureau of Foreign and Domestic Commerce, 1916. 141 p. 8°. Price, 15 cents. (Chapters on export policies; representatives and agencies; finances and credit; quotations; postal services; correspondence and translations; cooporation with consuls; packing; advertising; general trade extension; transit centers.

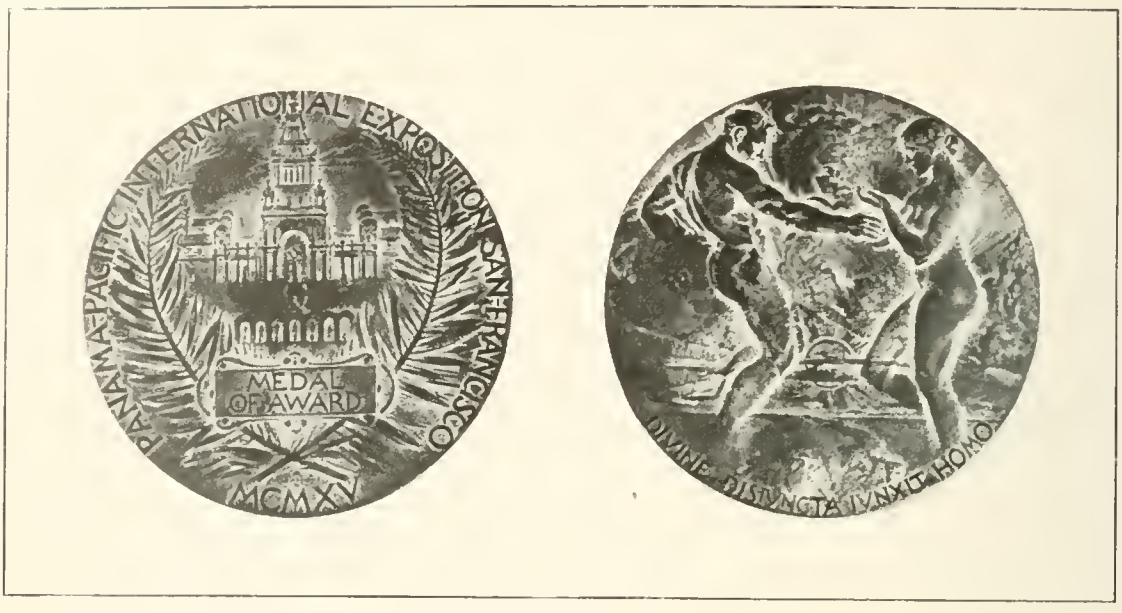
Second Pan American Scientific Congress . . . 1915–16. The final act and interpretative commentary thereon. Prepared by James Brown Scott, A. M., J. U. D., LL. D., reporter general of the congress. . . . Washington, Government Printing Office, 1916. 516 p. 8°.

Official Report of the Third National Foreign Trade Convention held at . . . New Orleans, La., January 27, 28, and 29, 1916. A stenographic report of the proceedings . . . New York, The Secretary, The National Foreign Trade Convention Headquarters, 1916. xxxi (1), 530 p. 8°. Price, $1.50. (At head of title: "Commercial preparedness.")

El Paraguay Moderno, o sea el Paraguay estudiado del punto de vista geográfico, agrícola, industrial, comercial y estadístico; en sus leyes de impuestos y de colonización; en su cultura general, que comprende la instrucción pública, las instituciones bancarias y de beneficencia, el movimiento demográfico, etc. Trabajo realizado por el Dr. Cecilio Báez, con la cooperación del Sr. Don José Rodríguez Alcalá. Asunción, Guadencio Yubero, 1915. 406 p. map, illus. 4°.

La Isla del Tesoro, por Roberto Luis Stevenson. Con introducción, notas críticas y vocabulario por el Dr. Guillermo A. Sherwell . . . Boston, D. C. Heath y Compañía, 1916. 313 p. 12°. Price, 75 cents. ("Clásicos literarios en inglés de Heath.") Text in English.

Autobiografía de Benjamín Franklin, con trozos escogidos de sus obras. Con notas críticas y modelos para la enseñanza. Traducción de M. R. Blanco-Belmonte. Vocabulario . . . por Alfredo Elías. Boston, D. C. Heath & Co., 1916. xviii, 422 p. 12°. Price, 75 cents. ("Clásicos literarios en inglés de Heath.") Text in English.



DIPLOMA AND GOLD MEDAL CONFERRED ON THE PAN AMERICAN UNION.

The International Jury of Awards of the Panama-Pacific International Exposition awarded the gold medal to the Pan American Union for its exhibit illustrating the methods, personnel, and results of activities of the organization. The diploma and obverse and reverse of the medal are shown above.

SUBJECT MATTER OF CONSULAR REPORTS

REPORTS RECEIVED UP TO JUNE 6, 1916.[1]

Title.	Date.	Author.
ARGENTINA.	1916.	
Mendoza wine industry	Mar. 25	Wm. Dawson, consul, Rosario.
Market for American marble and granite; list of dealers and contractors.	Apr. 11	W. Henry Robertson, consul general, Buenos Aires.
BRAZIL.		
New taxes on business in State of Sao Paulo	Mar. 25	Robert L. Keiser, vice consul, Sao Paulo.
Fisheries of Brazil	Apr. 3	A. L. M. Gottschalk, consul general, Rio de Janeiro.
Commerce of the port of Santos	Apr. 6	Carl F. Deickman, consul, Santos.
Annual report of commerce and industries for 1915, first section.	Apr. 10	A. L. M. Gottschalk, consul general, Rio de Janeiro.
Operation of new Brazilian law admitting travelers' samples under bond.	Apr. 14	Do.
Market for American marble and granite; dealers	...do.....	Do.
Annual report of commerce and industries for 1915, second section.	Apr. 17	Do.
Importation of inflammables into the port of Rio de Janeiro.	...do.....	Do.
Coal situation	...do.....	Do.
American Chamber of Commerce for Brazil	Apr. 26	Do.
Commerce of the port of Santos	Apr. 28	Carl F. Deickman, consul, Santos.
CHILE.		
Need of steamships to transport nitrate	Mar. 9	Thomas W. Voetter, consul, Antofagasta.
Market for American marble and granite	Apr. 5	Do.
Chilean budget for current year	Apr. 10	United States Embassy, Santiago.
Effort to improve sanitary conditions in Antofagasta	Apr. 22	Thomas W. Voetter, consul, Antofagasta.
CUBA.		
Amusement park and hippodrome	May 2	Henry M. Wolcott, consul, Habana.
Formation of Advertising Club of Cuba	May 6	Do.
Market for marble and granite; imports for 1911 and 1915.	May 10	Do.
DOMINICAN REPUBLIC.		
Annual report on commerce and industries, Santo Domingo district, for 1915.	Apr. 20	C. M. J. Von Zielinske, vice consul, Santo Domingo.
ECUADOR.		
Study of English in Ecuador	...do	Frederic W. Goding, consul general, Guayaquil.
Periodicals in Ecuador in 1915	Apr. 29	Do.
Recognition of studies in the exterior	May 11	Do.
GUATEMALA.		
Change in the postal tariffs	Apr. 25	Stuart Lupton, consul general, Guatemala.
Decree of Apr. 27, 1916, imposing export tax on sugar	May 2	United States Legation, Guatemala.
HONDURAS.		
Lack of distributing houses in Puerto Cortes district	May 10	Walter F. Boyle, consul, Puerto Cortes.
Sight drafts	...do....	Do.
MEXICO.		
Henequen exports; attitude of farmers and regulating commission.	May 2	Claude E. Guyant, consul, Progreso.
Tampico oil shipments during March and April, 1916	May 8	Claude L. Dawson, consul, Tampico.

[1] This does not represent a complete list of the reports made by the consular officers in Latin America, but merely those that are supplied to the Pan American Union as likely to be of service to this organization.

Reports received up to June 6, 1916—Continued.

Title.	Date.	Author.
PANAMA.		
Market for American marble and granite	Apr. 7	A. G. Snyder, consul general, Panama.
Annual report on commerce and industries for 1915, first and section sections.	Apr. 10	Do.
Transportation needs in Los Santos Province, Panama.	May 1	Do.
Proposed merger of power companies	May 8	Do.
PARAGUAY.		
Commerce and industries for 1915, first section	Mar. 9	Samuel Hamilton Wiley, consul, Asuncion.
Commerce and industries for 1915, second section	Mar. 25	Do.
VENEZUELA.		
Market for American marble and granite	Mar. 14	Homer Brett, consul, La Guaira.
New developments in automobile traffic	Apr. 11	Wm. D. Henderson, consular agent Ciudad Bolivar.
Mission of Bank of Venezuela	Apr. 24	United States Legation, Caracas.

ARGENTINE REPUBLIC

The Bureau of Rural Statistics of the Argentine Government estimates that approximately not over 6,000,000 tons of CEREALS of the new crop for 1915–16 will be available for exportation.——According to the official report for the railways of the State, presented to the Minister of Public Works on December 31, 1915, there were 5,582 kilometers of RAILWAYS in the Argentine Republic belonging to the State and over 28,000 kilometers owned by private parties. Of the State railways, 5,098 kilometers were narrow gauge and 484 kilometers wide gauge. Forty-nine kilometers of narrow gauge were constructed by the State during 1915 and 299 kilometers of narrow gauge line from Formosa to Embarcacion were acquired by the State on August 31, 1915.——To commemorate the discovery of America, the city of Palos, in Spain, port of departure of Columbus on his first voyage to America, has dedicated an avenue on which ground has been donated to each of the 21 American Republics for erecting MEMORIAL BUILDINGS. On March 15, 1916, the Argentine building, constructed after the style of the Columbian period, was inaugurated with impressive ceremonies.——A SCIENTIFIC EXPEDITION sent out by the German Geographic Society under Dr. Luis Witte is at present exploring near Lakes Viedma and Argentino, in the mountains of Argentine Patagonia. An extensive collection of the fauna and flora of that section has already been secured.——The Government of Costa Rica has established a Legation at Buenos Aires and raised the rank of its diplomatic representative to Minister Pleni-

potentiary.——The National Centenary Commission has delivered to the authorities of Cordoba the sum of 70,000 pesos for constructing a SCHOOL BUILDING, to be called "Castro Barros," in honor of the Cordoban patriot. The building is to be erected at once in a park near the city of Cordoba and will accommodate 300 students.—— Important modifications have been made by the Ministry of Agriculture in the IMMIGRATION LAW, and the new bill has been presented to the President for his signature.——Due to the scarcity of coal, there is increased activity in all four of the great oil fields of the Republic. QUEBRACHO WOOD, as a substitute for coal, continues to find a good market with rising prices. Since January, 1916, more than 5,000 workmen have been steadily employed in cutting this wood, while extracts of quebracho held fourth place in 1915 in Argentine exports, with total shipments amounting to 15,873,372 pesos, showing a gain of 10,686,426 pesos over the previous year.—— Large TILE MANUFACTORIES are soon to be erected at several places in the Republic to make use of the extensive deposits of clays suitable for all kinds of tiling and pottery ware.——The Transatlantic STREET CAR line of Buenos Aires transported in the month of February 2,203,461 passengers, the gross receipts during the month amounting to 123,541 pesos, from which the Company paid into the city treasury 3,805 pesos, or 3 per cent of the total for the concession.——According to the VITAL STATISTICS, there were 1,212 births, 483 deaths, and 178 marriages in the Territory of Neuquen during the year 1915. The mortality, in proportion to the population, was as low as in any other Territory or Province of the Republic.—— Small plots of ground cultivated in ASPARAGUS in the rich loamy lowlands of the Province of Buenos Aires, yielded in 1915 a net return of over 2,000 pesos per acre.—— The Argentine Social Museum has recently published a book of 250 pages containing important matter compiled by it in its campaign for NEUTRALIZATION OF THE INTER-AMERICAN MARITIME TRAFFIC.——The WORKMAN'S COMPENSATION LAW, recently enacted by the National Congress, provides for liberal indemnities to workmen injured in the course of industrial pursuits while employed in the service of another person. The law applies to persons working in factories, shops, industrial establishments, mines, smelters, buildings, excavations, agriculture, etc. The employer is exempt from responsibility when he can prove that the injury occurred through the fault or negligence of the laborer or of some third person.——The ARGENTINE EUCHARISTIC CONGRESS will hold its sessions in Buenos Aires July 19–21, 1916. Archbishop Monsigneur Espinosa will preside over it, and the apostolic delegate and all Argentine bishops will take part in its deliberations.——On April 18 the Argentine Central inaugurated

a new express train between Rosario and Retiro, composed entirely of coaches made at its Rosario shops. The new ROLLING STOCK is equal in every particular to the imported, and was manufactured by Argentine labor from native cedar and walnut timber.——In view of the increasing commercial importance of ports on the Patagonian coast, arrangements have been completed for constructing various LIGHTHOUSES AND BUOYS at all important places along the southern coast.——The FREIGHT TRAFFIC of the port of Buenos Aires for the first quarter of 1916 was as follows: Imports, 19,584 carloads, or 439,691 tons, as compared with 21,836 carloads, or 520,635 tons, during the same period of 1915; exports, 6,329 carloads, or 112,779 tons, against 8,046 carloads, or 171,534 tons, in 1915. The principal export products were wheat, corn, oats, and linseed, a recent shipment of 400,000 bushels of linseed having been made to the United States. Coal was one of the principal imports.——The Department of Labor has received requests for 2,250 LABORERS to cut wood in the forests of Chaco and Santiago del Estero, 50 per cent of the passage money to be paid by the employers and the other 50 per cent to be advanced and deducted from the wages. The railways request 1,200 laborers to work in the Provinces of Santa Fe and Buenos Aires at a salary of 2 pesos per day, and the public roads commission ask for 200 workmen at a salary of from 30 to 33 centavos per meter.——The sale of CATTLE from ranches, according to the official report of the Bureau of Rural Statistics, increased in value from 29,899,955 pesos national currency in 1914 to 114,643,257 pesos in 1915, while frozen beef ranked second in value of Argentine exports for 1915, with a total sale of 73,717,502 pesos, an increase of 40,889,728 pesos over 1914, not including frozen meat of other kinds.——ROSARIO, the second largest city of the Republic, had 1,401 births, 239 marriages, and 851 deaths in the months of January and February, 1916, out of a total population on February 29 of 234,885 inhabitants. For the past year the average per 1,000 inhabitants in births was 36.6; marriages, 6.4; deaths, 20. During January and February, 125 foreign vessels entered the port and 108 cleared; 1,767 passengers arrived on the railways and 1,252 departed.

BOLIVIA

Bolivian EXPORTS OF TIN ore for the year 1915 broke all previous records, and the amount shipped is given officially at 91,612 tons, as compared with a previous record of 67,189 tons made during 1913. In the purchase of this product the United States now assumes

second place, Great Britain being the larger customer. Since the operation of new smelters, financed by American capital, the outlook for the coming year is still brighter, and the United States may become the most important customer the country has.——The Wool Company of Bolivia, with headquarters in La Paz, is the name of a new corporation formed in the United States to develop the ALPACA WOOL industry. There are estimated to be in Bolivia thousands of alpacas, many of which are wild and whose wool is not secured. By systematic work it is believed the new industry has a most promising field, as hitherto no very serious effort has been made to commercialize the animal.——Señor Wenceslao J. Molins, the well-known Argentine writer, has just published in Buenos Aires a WORK ON BOLIVIA, written in Spanish, which gives an account of the various commercial and industrial activities now so important in the Bolivian Republic, and contains much other general information.——In order to facilitate freight traffic from Bolivia over the Arica La Paz Railway to the coast, as well as to offer more reasonable rates to the shipper, the management of the line has published a new TARIFF SCHEDULE which lowers the rates on many commodities. El Tiempo, of La Paz, under date of April 14, names a long list of articles affected and gives other details relative to the change.——Senorita Maria H. Oropeza, a young BOLIVIAN LADY, was recently graduated in dentistry at the local university in La Paz after a four years' course. She is the first woman in Bolivia to receive the title of Doctor of Dentistry; she made a very high average in studies and her thesis was considered so excellent that local papers published it in full.——The BOY SCOUTS' organization of La Paz has been performing some very difficult tasks in connection with exploration and long marches. Recently some of the boys became lost and other members of the organization volunteered to join in hunting the lost ones. They wandered many miles under most trying circumstances and finally succeeded in locating their lost companions, not however, until some of the latter had become too weak to travel and had succumbed.——Madame Dubois Chateaux d'Oex, the French lady whom the LICEO NORMAL DE NINAS of La Paz engaged to take charge of the institution, has sailed for Bolivia, where she is expected at an early date. It is believed that this experienced teacher and administratrix will greatly improve and modernize the work of the school.——The Bank of the Nation of La Paz has DECLARED A DIVIDEND of 4.30 per cent.——The Minister of Foreign Relation of Venezuela has made a request through official channels for copies of Bolivia's favorite MUSICAL COMPOSITIONS—a fact emphasizing the popularity of the latter country's productions in music.

BRAZIL

The FOREIGN COMMERCE of Brazil for the first two months of 1916 showed increases of 46,828 contos paper (conto paper = about $250 United States currency) in imports and 2,364 contos in exports, as compared with the corresponding period in 1915.——A SAILOR'S HOME is shortly to be constructed in Rio de Janeiro, modeled after the best of its kind in Europe and America.——The world production of COFFEE during the year, July 1, 1914, to June 30, 1915, amounted to 17,886,000 bags of 60 kilos (132.28 pounds), 8,174,130 bags of which, or about 46 per cent, went to the United States. Of this world total, Brazil produced 11,867,000 bags, or 72 per cent, 5,840,994 bags of which went to the United States and represented 45 per cent of its importation. It is estimated that the coming crop in Brazil will exceed the last by nearly 1,000,000 bags. During February 851,155 bags of coffee were shipped from Santos, as compared with 712,046 shipped in January. The *Wenbergen*, of the Brazilian Lloyd Co., recently cleared from Rio de Janeiro for New York with a cargo of 96,000 bags of coffee.——Invitations to attend the FIFTH BRAZILIAN CONGRESS OF GEOGRAPHY have been sent out by the organizing committee. The congress will meet in the city of Salvador, capital of the State of Bahia, September 7–16, 1916. It is expected that it will be the best attended and most important that has ever been held in Brazil.——The new AVIATION SCHOOL established by the Brazilian Aero Club was recently opened with appropriate ceremonies.——A bill is before the State Legislature of Pernambuco which provides for the creation of a FORESTRY SERVICE to regulate the cutting of wood and to conserve the forests of the State.——According to a recent report of the Ministry of Agriculture, Brazil imports annually over 20,000 contos worth of salted and preserved fish, and an active propaganda is being made to promote the FISHING INDUSTRY and to make use of its own abundant supply of fresh-water and sea fish.——The *Segurança*, a 4,000-ton vessel, is the first of a new LINE OF STEAMERS between New York and Brazilian ports, called the Commercial South American Line.——It is estimated that over 500,000 kilos of FLAX will be harvested in the State of Rio Grande do Sul in 1916 as compared with 50,000 kilos in 1915, and that the area planted in April and May, 1916, will be twice as large as that of any previous year.——The report of the BANK OF BRAZIL for the year 1915 has been made public and shows the bank's condition more prosperous than for any of the three previous years. Its present condition is reflected in the increased clearings and balances of its general agencies throughout

the Republic, of which the total balances on hand December 31, 1915, aggregated 17,407 contos as compared with 8,038 contos on hand December 31, 1914.——After holding sessions in Panama, Peru, and Argentina, the LATIN AMERICAN EVANGELICAL CONGRESS recently met in Rio de Janeiro to continue its discussion of important evangelical problems.——The Government has signed the contract for the construction of the building for the MEDICAL SCHOOL at Rio de Janeiro, which is to be completed in a period of 22 months at a cost of 2,180 contos.——According to the report of the Director of Telegraphs at the end of 1915 there were in Brazil 36,705 kilometers of TELEGRAPH lines, with wires aggregating a length of 68,315 kilometers and with 725 telegraph offices and 6 semaphoric offices with telegraph service, besides 17 wireless stations. The domestic telegrams sent aggregated 3,589,417 and contained 64,587,951 words. The foreign messages transmitted numbered 263,988 and contained 4,058,453 words. The gross receipts from telegrams were the largest in the history of the service, amounting to 14,573 contos as compared with 11,405 contos in 1914.——A NATIONAL CORN CLUB has been organized in São Paulo for the purpose of encouraging the cultivation of corn in Brazil. Corn clubs will be established wherever 10 or more members reside. No fee is charged for membership, and members may be either active or cooperative. Active members will cultivate one-half hectare in corn in accordance with instructions furnished by the national club. The progressive ideas of the organization have aroused great enthusiasm, and it is expected the movement will have great success. The second National Corn Exposition will be held in the city of Bello Horizonte, July 19–21, 1916, and prizes worth over 300 contos will be awarded the best exhibits, three prizes being offered for each variety. No charge is made to exhibitors.——The date for the projected visit to the United States of a COMMISSION representative of Brazilian commerce and industry, has not yet been definitely fixed, but it is expected that the personnel of the commission will soon be chosen and the date for its arrival in New York made public.

CHILE

A proposal for DREDGING Rio Bueno from the ocean up to Lake Rauco, 130 kilometers, has been submitted to the Government. The purpose of the dredging is to make navigable the river, which it is claimed can be done at a relatively small cost. This improvement would give an outlet for a territory having great agricultural possibilities.——Much interest is being shown in the proposed

National INDUSTRIAL EXPOSITION to be held in Santiago some time in September of the present year. The demand for exhibition space has been very large, and replies to the first circular letter sent out have been most encouraging. A large section of the exposition building will be reserved for foreign exhibits, particularly of industrial machinery, apparatus, tools, and implements. The enterprise is under the auspices of the Society for Encouragement of Manufactures. Communications should be directed to "Secretaría de la Sociedad de Fomento Fabril, Moneda, 759, Santiago, Chile."——The Chilean Congress has appropriated 33,000 pesos for the initial expenses in founding the new INDUSTRIAL SCHOOL to be located at Valparaiso. At present the school will be conducted in temporary quarters, and only the first year's course will be taught. Later a suitable building will be secured or erected for the purpose, and instruction in the full three years' course will then be undertaken.——PETROLEUM has been recently discovered in the Magallanes territory in southern Chile. A shallow surface boring near Rio Amarillo produced a thick, black, crude oil, according to a recent report by the Governor of the Territory to the Minister of the Interior. ——The original BUDGET estimate of national receipts in 1916 was 76,075,600 pesos, gold, and 98,550,000 pesos, paper. The recent estimate made by the Mixed Commission raises the figures to 81,516,000 pesos gold, and 115,103,000 pesos paper. Of the gold receipts 77,740,000 pesos are from nitrate of soda, and of the paper receipts 63,000,000 pesos are from import duties.——The import COASTWISE TRADE of Punta Arenas in 1915 amounted to 8,677,134 pesos, as compared with 5,505,592 pesos in 1914. Over one-half of this import trade in 1915 was with the port of Valparaiso, the next ports in importance being Talcahuano and Valdivia.——Sr. Carlos Castro Ruiz, late assistant secretary of the department of foreign relations, has been appointed CONSUL GENERAL of Chile in New York and chairman of the Chilean delegation to the permanent board of jurisconsults in Rio de Janeiro, charged with the codification of international public and private law in America.——José Victor Besa has been elected MAYOR of Santiago.——The CONGRESS OF MINES and Metallurgy formally opened its sessions in the hall of honor of the National Mining Society in Santiago on April 25 last, President Juan Luis Sanfuentes, ex-President Ramon Barros Luco, members of the cabinet, and other high officials of the Government being present. Among others, Sr. Carlos Besa, president of the congress, made an address, in which he stated that the production of copper in the Republic in 1915 amounted to 46,000 tons, 33 per cent of which represents the output of this metal from mines entirely owned, controlled, and operated by Chileans, while the remainder was from mines belonging to foreigners. In 1876

Chile produced the greatest quantity of copper, the output of that year aggregating 52,000 tons extracted from 400,000 tons of copper ore assaying 15 per cent copper, as compared with a production of 46,000 tons in 1915 extracted from 1,400,000 tons of low-grade copper ores containing 4 per cent of copper. The work of the congress is divided into six sections, as follows: 1. Metallic mining and metallurgy; 2. Nitrate, borate, natural salts, sulphur, and guano; 3. Coal and petroleum; 4. Geology and mineralogy; 5. Legislation; and 6. Mining instruction.

COLOMBIA

The total FOREIGN TRADE of Colombia for the year 1915 amounted to $47,923,526, of which $18,658,178 represented imports and $29,265,348 exports. The figures for the year 1914 were: Imports, $20,979,229; exports, $32,632,884; total, $53,612,113. There was therefore a decrease for the year 1915, as compared with the preceding year, of $2,321,050 in imports, and $3,367,536 in exports, or a total decrease in foreign trade of $5,688,586. The balance of trade in favor of the Republic for the year 1915 was $10,607,170, and for the year 1914, $11,653,655.——The consul general of Colombia in London has informed his Government that the obligations of the FOREIGN DEBT of the Republic have been discharged in such a satisfactory manner that the committee of English bondholders has published a report complimenting Colombia on the prompt manner in which it meets its obligations.——The Colombian Academy of Jurisprudence will appoint five of its members to draft a law governing the practice of the profession, and to draw up rules, regulations, and by-laws which will serve as a basis for the establishment of LAW SCHOOLS in the national capital and in the capitals of the judicial departments of the Republic. The same organization has appointed Drs. Eduardo Talero and Guillermo Ancízar delegates to the American Congress of Bibliography, History, and Social Sciences, which will be held in Buenos Aires in July next.——The newspaper entitled *El Correo del Cauca* has published statistics showing that the production of CACAO in the Department of Valle in 1915 was valued at $459,560, gold. The number of trees in this Department is estimated at 4,595,600 and the normal production of cacao at more than 9,000,000 kilos. The low average per tree is due to the fact that some of the trees of the plantations of the Cauca Valley are over 60 years old.——The legislature of the Department of the Atlantic has set aside May 1 of each year for the celebration of LABOR DAY.—The National Government has submitted plans and estimates for

DREDGING the mouth of the Magdalena River to the Society of Engineers of Bogota. The work, which is estimated to cost $6,000,000, is to be commenced as soon as Congress approves the plans and estimates.——Gen. Ramón González Valencia, ex-President of the Republic, has been appointed minister of Colombia near the Government of Venezuela.——The municipal council of the city of Manizales has named the principal street of that municipality CERVANTES AVENUE in remembrance of the author of Don Quixote.——A company has been organized at Ibague, capital of the Department of Olima, to encourage and assist *agriculturists* of limited means in obtaining their own homes.——Press reports state that the Bogotana Packing House Co., with a capital of $1,000,000, has been organized in New York to establish a PACKING HOUSE on the Sinu River. The establishment is to be of a capacity for handling 100 head of cattle daily.——The governor of the Department of Santander has approved the contract for the construction of the CARARE RAILWAY.——The PUBLIC ROAD which is being built in the Territory of Caqueta, and which is to terminate at the mouth of the Pescador River, is being rapidly constructed. This highway runs parallel to the Orteguasa trail and traverses an immense region rich in natural products.——The Riohacha AQUEDUCT, which will soon be opened to public service, is a work of great importance, especially from a sanitary point of view, to the Atlantic port of Riohacha.——Work has been commenced on the Cucuta to Magdalena River WAGON ROAD in the section between the city of Ocaña and the Magdalena River. This road will be the principal means of communication through that region until the Tamalameque railway is built.——A well-equipped ELECTRIC light and power plant has been established at Campoalegre, Department of Caldas, near the towns of San Francisco and Cabal.——The bureau of statistics of the department of agriculture is preparing to take a STOCK CENSUS of the Republic at as early a date as possible.

COSTA RICA

In his MESSAGE to Congress, delivered on May 1 of the present year, President Alfredo Gonzalez devotes special attention to the economical problems that affect the country at the present time, and states that the international affairs of Costa Rica are most satisfactory. Great progress was made during the year in all branches of education, 35,713 pupils being enrolled in the schools of the Republic, showing an increase in attendance over the previous year of 3,164. A need is felt for better prepared teachers, and the Government is

planning to send abroad a number of teachers to study methods and the most up-to-date educational facilities. More than 350 students of both sexes enrolled in the normal school during the first year of its existence and its success is assured. Work on the roads and public highways was greatly facilitated by the use of convict labor for the first time, in accordance with the decree of October 22, 1914. In 1915 the receipts of the Pacific Railway amounted to 683,996.82 colones (colon = $0.465) and the expenditures to 598,318.15 colones, which leaves a net profit of 85,678.67 colones. In 1914 the net profit of this railway was 43,169.31 colones, and in 1913 there was a deficit of 63,992.80 colones. The balance of trade in favor of the Republic for 1915 amounted to 11,812,471 colones, the highest figure reached for many years. Due principally to the crisis in the shipping trade, the revenues of the Republic decreased from 8,601,690.03 colones in 1914 to 6,334,445.50 colones in 1915, as most of the revenue is derived from customs receipts on imports, which decreased from 16,240,170 colones in 1914 to 9,631,790 colones in 1915. The public debt on December 31, 1915, amounted to 41,280,756.63 colones, or an increase of 3,753,844.35 colones over 1914, interest on which has been paid promptly. There was little difference in the value of exports for 1915 as compared with 1914, and practically every product which Costa Rica could supply was taken at good prices in 1915, and exportation in 1916 will show a large increase over former years.——A bill has recently passed Congress authorizing the President to contract a loan of $500,000 for the construction of a WHARF at Puntarenas, the Pacific port terminal of the Pacific Railway. It is estimated that the commerce of this port amounts annually to 12,000 tons, and the bill provides for a tax of 5 colones per ton for payment of the interest and amortization of the loan. It is left for executive decision whether the wharf is to be constructed by the Government or by contract.—— In view of the great success attained by the rural credit system of the International Bank, President Gonzalez has recommended the immediate establishment by that bank of a department, with a capital of 500,000 colones, for MORTGAGE LOANS on long terms and at low rates of interest to small landowners. No loan is to exceed the sum of 2,500 colones, and the value of the property mortgaged should be at least double the amount of the loan.——The steamer *Cowd* recently cleared from Limon with a cargo of 500 tons of BROWN SUGAR for the English markets.——The production of wine made from the fruit of the CASHEW TREE increased from 1,300 liters in 1915 to 13,917 liters in the first four months of 1916, and found ready sale at 1.25 colones per liter. A factory has been built for manufacturing the wine and for developing the important industry. The kernels of the seed of the fruit are as edible as any of the popular nuts, and trial shipments of them have recently been made to

the United States.——Important public subscriptions have recently been raised for improving the public HIGHWAY from San Jose to Heredia.——A concession has been granted for the establishment of a CEMENT FACTORY in the Republic to meet the greatly increased demand for this product in construction work.——ARBOR DAY will be celebrated throughout Costa Rica by the public schools and organizations of workmen, in accordance with an executive decree of May 25, 1915, providing for its annual celebration.——A concession has been asked for by both foreign and national parties for constructing POTTERY WORKS to cost not less than 50,000 colones. Tests made of the extensive kaolin deposits existing in the Republic have proved its value for the manufacture of high-grade china and pottery ware.

CUBA

The total FOREIGN COMMERCE of Cuba for the fiscal year ending June 30, 1915, amounted to $347,579,412, of which $128,132,090 represented imports and $219,447,322 exports. The figures for the preceding fiscal year were: Imports, $134,008,138; exports, $170,796,851; total, $304,804,989. There was, therefore, in the fiscal year 1914–15 a decrease in imports of $5,876,048, and an increase in exports of $48,650,471, or a net increase in the foreign trade of $42,774,423.——Press reports state that the Secretary of Agriculture of the Government of Cuba is considering plans for the establishment in the Republic of a factory for the manufacture of SUGAR BAGS out of Mexican agave fiber grown on the island. In 1914–15 Cuba imported 27,244,717 kilos of jute sacks, valued at nearly $4,500,000, the sugar crop alone for that year requiring 17,944,196 kilos. Jute sacks are at present imported from India, and the price has nearly trebled since the beginning of the European war. A new fiber produced from the plant called "Malva blanca" (Urena labata) has been discovered in Cuba, and it is thought that this fiber can be used in the place of jute or henequen in the manufacture of sugar bags. The plant grows wild in a number of the Provinces of the Republic, attains a height of about 20 feet, and is very abundant. It is susceptible of cultivation and can be made to produce two cuttings annually.——The department of sanitation of the city of Habana has ordered the use of the water of the Almendares River to supplement the supply from the Vento Canal. A strict watch will be maintained to prevent the pollution of the Almendares River, the water from which will be disinfected by chlorine gas before reaching the water mains of the city.——The Jaruco Mining Co. is reported to have been organized in Habana with a capital of $2,000,000. Among other things, this company

proposes to prospect for oil in the Province of Habana and has possession of a large tract of land reputed to be in the oil or asphalt zone of the Republic.——One of the large sugar plantations of eastern Cuba has recently had N. H. Darton, a geologist of the United States Geological Survey, investigate the prospects for ARTESIAN WELLS to supply water for irrigation purposes during the dry season or in times of drought. Scanty rainfall in some sections of the island in recent years has greatly interfered with the maturing of sugar cane and caused considerable loss to cane growers and agriculturists.——An order has been placed in New York by the mayor of Habana for seven AUTOMOBILE FIRE ENGINES, one of which can pump 1,400 gallons of water per minute. Two hook and ladder wagons and 7,000 feet of hose were also ordered. The equipment, which will cost $70,000, is to be delivered in Habana within four months.——WILD VANILLA has been discovered on the Isle of Pines. Samples sent to Indianapolis chemists for analysis showed the beans to be fine specimens of wild vanilla worth $2 a pound.——A SCHOOL OF MIDWIFERY, forming a part of the Provincial Hospital of Santiago de Cuba, was opened for instruction on May 7 last under the direction of Dr. José A. Ortiz.——The Senate has passed a law providing for the PAVING of the streets of Cienfuegos. President Menocal has promulgated laws authorizing a credit of $100,000 for the Nuevitas AQUEDUCT, $35,000 for the Guantanamo HOSPITAL, and $20,000 for the Puerto Padre Hospital.——The Hershey Cuban Railway Co., the promoter of which is Milton J. Hershey, an American chocolate manufacturer, has received a franchise from the Cuban Government authorizing the building of an ELECTRIC LINE from Matanzas to Habana. The interurban company will receive $6,000 from the Government for each kilometer of track laid. The Habana terminal of the line will be at Casa Blanca.——The board of health has issued an order requiring BLOOD TESTS from Jamaican and Haitian immigrants, and if found to have malarial germs they will be excluded from the country.——The Miranda Sugar Co. has contracted for the construction of the Miranda SUGAR MILL near Palmarito, Oriente.

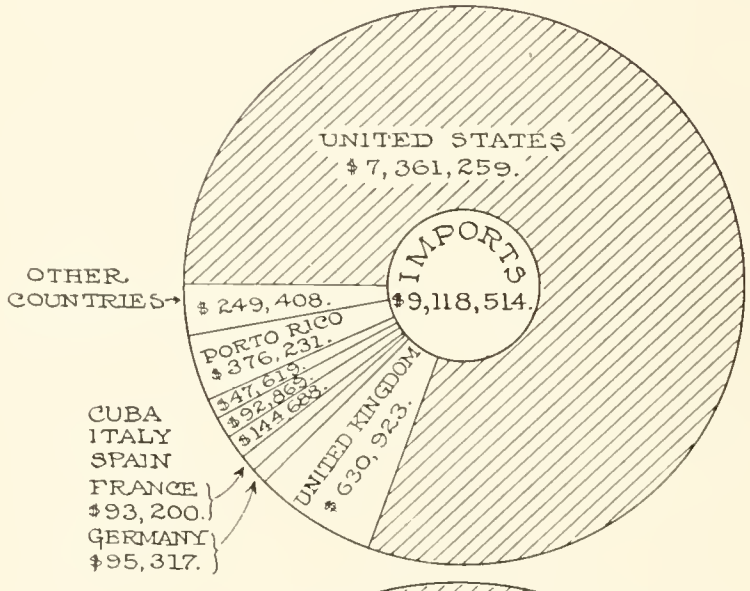
DOMINICAN REPUBLIC

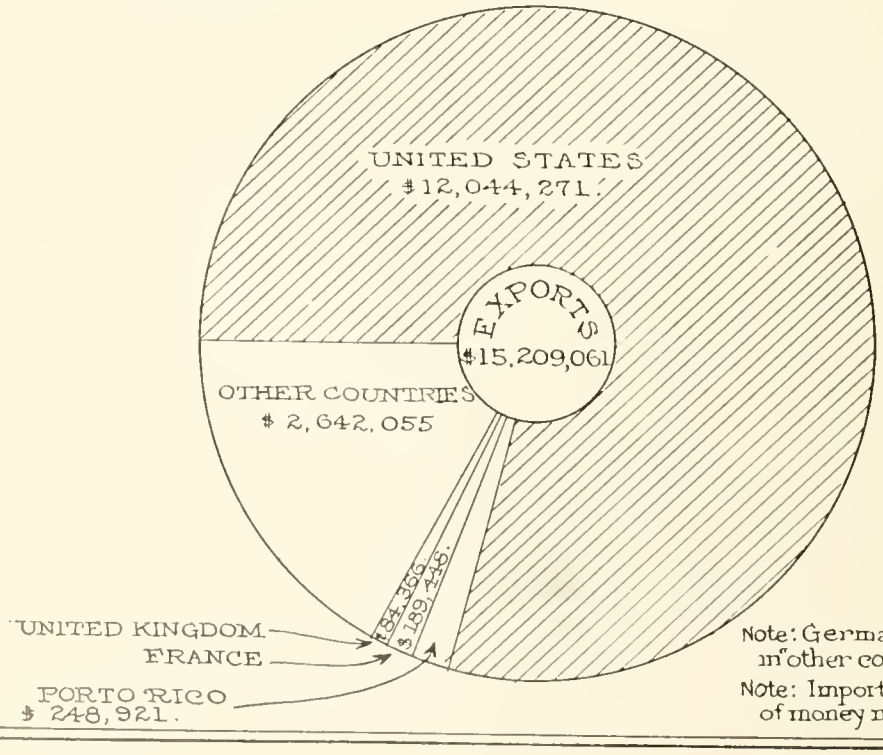
During the latter part of March of the present year the National Congress approved the contract made by the Executive Power with Horacio V. Vicioso, under the terms of which the Government grants authority to the latter to construct and operate an ELECTRIC TRAMWAY between the city of Santo Domingo and the towns of San Cristobal and Bani. The concessionaire is authorized to use for

DOMINICAN REPUBLIC

COMMERCE ~1915

$24,327,575.





Note: Germany is included in "other countries" with $5,644

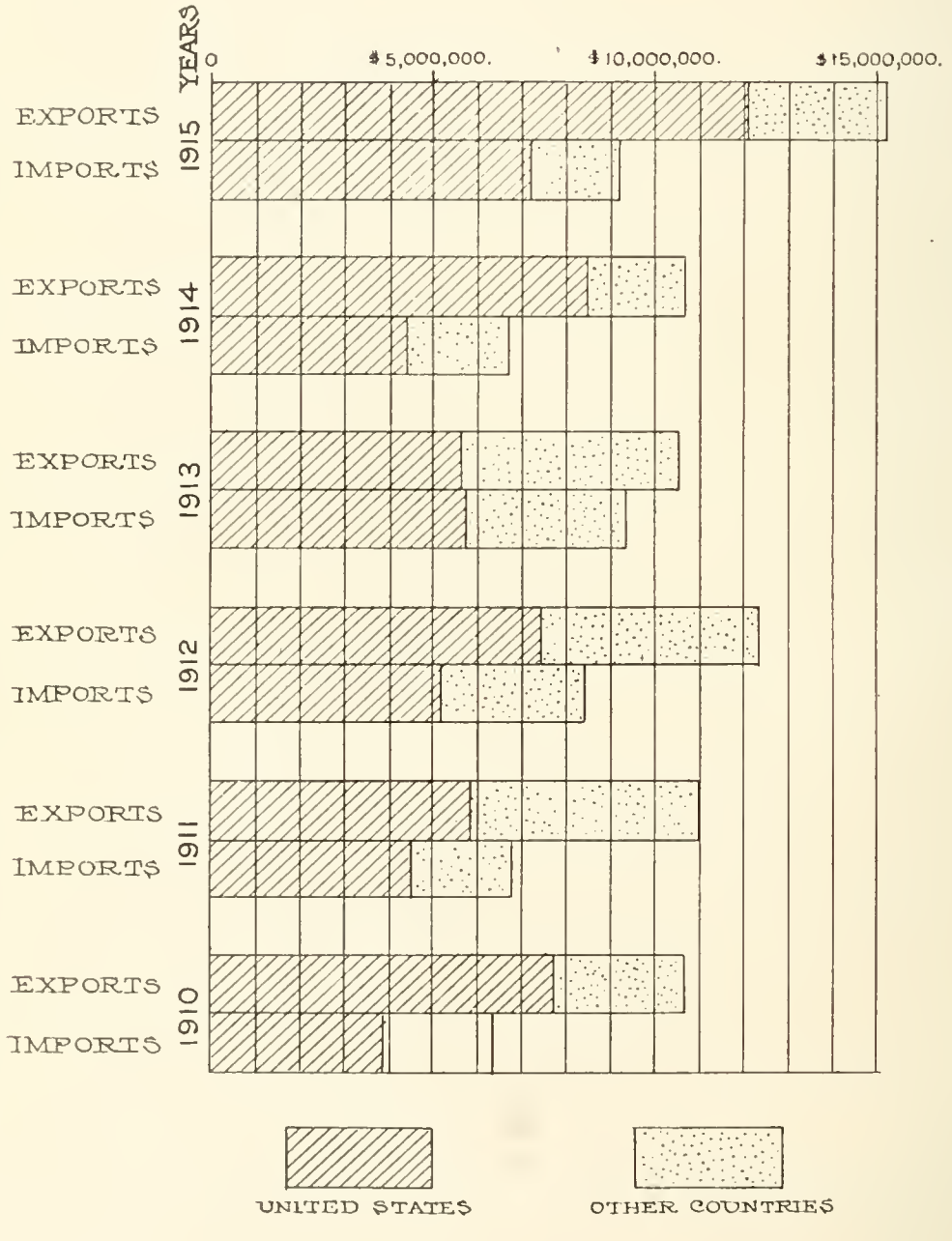
Note: Imports and exports of money not included

this purpose the Government highways, cart roads, and bridges along the route of the line, reserving for public traffic a minimum width of 5 meters. The concessionaire agrees to repair any imperfections in the public roads caused by building and operating the electric line. The gauge of the tramway must be at least 84 centimeters. Construction work is to be commenced within one year.——On April 27 last the Senate of the Congress of the Dominican Republic voted an appropriation of $200,000 for the construction of a CUSTOMHOUSE at San Pedro de Macoris and for the extension of the wharf at that port.——The department of fomento and communications recently opened to public traffic 9 kilometers of the DUARTE ROAD which runs between Gala and Alcarrizos. This extension makes the constructed part of the highway from Independence Park to the capital of the Republic 15 miles.——A bill has been introduced into Congress, under the terms of which, beginning July 1 next, 20 per cent of the proceeds of the tax on alcohol and the stamp tax is to be applied to the construction of STATE RAILWAYS and interest guaranties in accordance with the terms of contracts made by the Executive Power and approved by the National Congress.——During the latter part of April, 1916, a board was organized at Bayaguana, one of the objects of which is to improve the PUBLIC ROAD between that town and Boca del Yabacoa. The principal plantation owners at Bajabonito have decided to build a wagon road from that place to the city of Puerto Plata.——According to El Porvenir, a daily newspaper of Puerto Plata, the senate has approved a contract for the construction of a RAILWAY from Manzanillo to La Vega, and the Executive Power has authorized Julio Coiscou to build a railway from San Pedro Macoris to the city of Santo Domingo.——According to press reports, the TOBACCO crop of the Dominican Republic for the present year promises to be about double the normal crop of former years.——The Artisan & Industrial Club of Santo Domingo has commenced the publication of a MAGAZINE entitled Trabajo y Luz (Work and Light).——A NEW DOCK is to be erected at Puerto Plata. Bids for supplying various classes of materials were opened by the director general of public works in Santo Domingo City on June 8, and the awards will soon be announced. The dock is to be large and modern in every respect and will have concrete approaches and other facilities for freight and passenger traffic.——The first shipments of LOGWOOD for a number of years were recently made from Puerto Plata, and the industry has assumed a great impetus and prices are extraordinarily high. A short time ago $22 a ton was considered exorbitant; to-day the wood is quoted at $35 per ton and may go much higher. Freight rates to New York and other markets have also advanced. A few years ago the rate per ton to New York was under $5 but at

DOMINICAN REPUBLIC

COMMERCE

1910—1915



present it is approximately four times that amount. The American consul in Puerto Plata estimates that the Republic will have at least from 3,000 to 5,000 tons of logwood for export this year.—— Only one STEAMSHIP LINE is maintaining regular services between New York and Santo Domingo, and the high rates for freight to the former city make the shipment of raw products almost prohibitive. Many tons of logwood, greatly in demand in world markets, are piled up in Dominican ports awaiting shipment.——CORRUGATED-IRON sheets for building purposes are in demand throughout the Republic, as European markets which supplied this product have been cut off. American manufacturers are not responding to the call for larger shipments. Import duty on such sheets is 91 cents for each hundred pounds.

ECUADOR

According to data recently published by the customs bureau of Ecuador, the EXPORTS OF CACAO through all the ports of the Republic from 1913 to 1915, inclusive, amounted to 126,097,891 kilos, valued at 61,231,754 sucres (1 sucre=$0.4867). The exports, by years, were as follows: 1913, 41,869,235 kilos, valued at 20,524,340 sucres; 1914, 47,210,017 kilos, valued at 20,769,322 sucres; and in 1915, 37,018,639 kilos, valued at 19,938,092 sucres. The quantity of cacao consumed in the country is estimated at 4,600,000 kilos per annum.——An order of the department of public instruction provides for the establishment in the Central University of Quito of a department of DENTISTRY. The course covers a period of four years, and a baccalaureate degree is required for entrance.——On April 17 last the new PROVINCIAL STAMPS ordered by the Government from the American Bank Note Co. were put in circulation. The stamps intended for one Province can not be used in another.——A permanent provincial board has been established at Ibarra with the sole object of assisting the Government in completing the ESMERALDAS RAILWAY.——The OROZCO PARISH, on the Banks of the Pastaza River, in the Province of Pichincha, has just been established under an executive decree.——The War Department has arranged for the organization of classes in each section of the national army for the study of LAND FORTIFICATIONS.——The Government has cabled an order to New York for 15,000 barrels of CEMENT to be used in the construction of the Curaray railway.——The Juridic Literary Society of Quito has arranged for competitive essays on the subject of the FINANCE OF THE COUNTRY. The first prize will be a gold medal and the

second a diploma of honor. The prize essays are to be published in the society's magazine and may be submitted to congress at its next session if the information contained in them is deemed of sufficient interest.——The press at Quito announces that the Government has decided to expend 20,000 sucres in the repair of the Bahia de Caraquez to Quito RAILWAY so as to enable traffic over the entire line to be resumed at as early a date as possible.——LABOR DAY was appropriately celebrated throughout the Republic on May 1 last. In the cities of Guayaquil and Quito large crowds assembled, addresses were made, and processions of workmen marched through the streets.——The municipal board of Bahia de Caraquez has commenced the construction of three CREMATORIES for the destruction of the city's refuse. A municipal order requires that as soon as the crematories are in operation the waste of the city shall be brought to them daily for incineration.——A company has been organized at Ibarra with the object of developing the Province of Imbabura. One of the first works of the company was the commencement of the construction of an AUTOMOBILE ROAD from Ibarra to Quito, via the towns of Otavalo, Cayambe, and Guaillabamba.——Rafael Barriga has contracted with the National Government to take the rural CENSUS of the Province of Chimborazo from 1917 to 1920, inclusive.——The late Dr. Mariano Aguilera left 30,000 sucres to the CIVIL HOSPITAL of Quito. The will also provided for the sale of a house in Quito, the proceeds of which are to be placed at interest and the interest used for three annual prizes to be given to the Ecuadorian artists who excel in the competitive contests held in Quito on August 10 of each year.

GUATEMALA

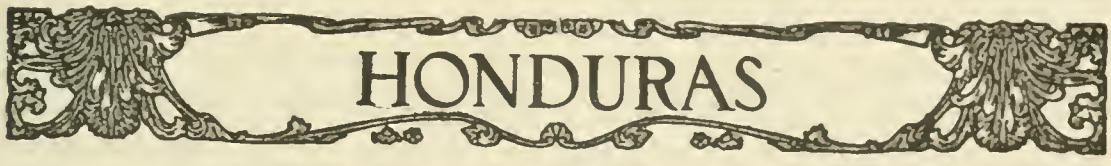
The COMMERCIAL TREATY concluded between the representatives of the Governments of Guatemala and Italy in the City of Guatemala on February 28, 1916, was ratified by the Guatemalan Congress on April 21 last and was duly promulgated by President Manuel Estrada Cabrera on May 5 of the present year.——The expenditures BUDGET of the Government of Guatemala for the fiscal year 1916–17, as approved by Congress, amounts to 63,095,092 pesos (paper peso = about $0.03), distributed as follows: Department of interior and justice, 6,775,567; foreign relations, 3,629,667; treasury, 4,702,132; public credit, 23,139,148; fomento (promotion), 6,688,204; war, 10,270,207; public instruction, 7,214,877, and other outlays, 675,890.——A recent report of the department of the interior of the Guatemalan Government shows that in 1915 there was a natural

increase in the population of the country by the excess of BIRTHS OVER DEATHS of 24,000 souls, inasmuch as the births during that year numbered 78,000 and the deaths 54,000.——The International Railways of Central America with headquarters at Guatemala City, have announced that, beginning with May 1, 1916, the Guarda Vieja RAILWAY STATION was opened to public service and freight and passengers will be carried at the charges specified in the regular freight and passenger tariffs.——A number of GOLD PLACER MINES have been denounced in the San Pedro Ayampuc district of Guatemala. Samples of ores taken from these mines assay, according to information published in the daily press, 400 grams of gold per ton. The work done so far on these claims indicates extensive gold deposits of great value, and considerable prospecting is being carried on in the immediate vicinity.——An executive decree of April 14, 1916, establishes a NIGHT SCHOOL for adults in the town of Santa Maria de Jesus, district of Sacatepequez.——ENGLISH courses have been established in the schools for boys and girls in the department of Chiquimula.——President Manuel Estrada Cabrera recently received in public audience Gilberto Larios, special envoy and minister plenipotentiary of Nicaragua near the Government of Guatemala. Mr. Larios visited Guatemala for the purpose of entering into negotiations concerning the celebration of SPECIAL TREATIES to supplement the general treaty of free commerce existing between the Central American Republics, as provided in the recommendations of the Third Central American conference.——The President of the Republic has appointed Jesus Martinez Rosell director of the practical SCHOOL FOR BOYS of the town of Escuintla.——The Guatemalan Government will participate in the American CONGRESS OF SOCIAL SCIENCES to be held at Tucuman, Argentine Republic, in July next, and President Estrada Cabrera has appointed Adolfo Esquivel de la Guardia a delegate to the same.——The Government of Guatemala has established a CONSULATE AD HONOREM in British Columbia and Western Canada and has appointed Thomas M. Taylor consul of same. Alfonso Sichel has been appointed consul ad honorem in Paris and Joäo de Freitas Martins consul ad honorem in Funchal.——The President of the Republic has appointed Oscar Hahn to represent the Government of Guatemala at the FIRST CHILDREN'S CONGRESS, which will be held in Buenos Aires, in July next, in commemoration of the first centenary of the independence of the Argentine Republic.——Jorge Lobos has petitioned the department of fomento (promotion) for authority to establish a STEEL NAIL FACTORY in the city of Guatemala.——The public HIGHWAY from Sumpango to Antigua has been placed in first-class condition, and automobiles from the Federal capital can make the trip over this road in about four hours.

HAITI

To promote the CULTIVATION OF CACAO as much as possible, it being one of the principal sources of national wealth, the department of agriculture has recently ordered from abroad a large quantity of selected cacao seed for distribution among agriculturists and owners of cacao plantations in different sections of the Republic.——Under the name of "Patriotic Union" a LITERARY CLUB has been organized in Port au Prince whose principal aim is to work for the perfection of the present public-school system. For the better attainment of its purposes, it has affiliated with the Young People's Association of Haiti, an organization of kindred interests.——On May 1, 1916, the water service department put into effect a NEW SCHEDULE regulating water rates in the capital city.——At the beginning of May the Nouvelliste, one of the oldest papers in Haiti, celebrated its nineteenth anniversary.——The National Government is soon to undertake extensive repairs in the ARSENAL AND WHARF OF BIZOTON that the latter may be used for public service as soon as possible.——The Matin, an important daily of Port au Prince, published in its issue of May 6 an interesting article on the most popular TROPICAL FRUITS in the markets of the United States, pointing out, at the same time, the great opportunity existing in Haiti for increasing the cultivation of such fruits as oranges, pineapples, grapefruit, etc., which could find good markets in the United States and elsewhere at highly remunerative prices. The author of the article cites the case of an agriculturist in Porto Rico who has a 100-acre plantation of pineapples near Ponce on which he cleared a net profit the past year of $25,000, adding that in Haiti there is a large amount of ground that can produce as good results, if not better.——The central amortization board, acting in accordance with the laws of the country, incinerated, on April 10 of the present year, BANK BILLS of the denominations of 1 and 2 gourdes amounting to 82,791 gourdes.——On May 1 the FLOWER FESTIVAL was celebrated with great enthusiasm in the Champ de Mars. The most interesting feature of the day was the procession of decorated carriages in which the high society of the capital participated. After the procession the five most artistically decorated carriages were awarded prizes by the popular vote of the spectators.——According to Le Matin, the *Elizabeth Weems*, of the RAPOREL STEAMSHIP LINE, reached Port au Prince on May 3, being the first merchant vessel flying the American flag to enter Haitian waters, and inaugurated a regular service between Haitian and United States ports for the development of commerce between the two countries.——A

BRIDGE has recently been opened to traffic over the Latiomo River at Leogane and is filling a long-felt need.——A new WEEKLY PAPER is now being published in Port au Prince, entitled "Le Constitutionnel," and is directed by M. Léon Louhis.——A recent presidential decree establishes in the Emile Dubois School of Port au Prince a special DEPARTMENT FOR GIRLS who have received no certificates in the primary grades and who have passed the school-age limit in the primary schools.



The law imposing a duty of 15 per cent on EXPORTS OF SILVER COIN has been in force for seven years. Until recently no abnormal exports of this metal have been noted, but within the last few months, due to the steady rise in value of the Honduran silver peso, which is now quoted at about 50 cents gold in New York, the exports of this coin were stimulated to such an extent that the country was threatened with a shortage of silver pesos. The Government, justly alarmed at this condition of the money market of the Republic, has temporarily prohibited exports of silver coin. The increase in value of the Honduran silver peso has had the effect of driving into circulation most of the idle and hoarded silver coin existing in the country, much of which seems to have drifted into the national capital, the coast towns, and other centers of industry.——Among the important PUBLIC UNDERTAKINGS successfully completed in Honduras during 1915 is the large railway bridge over the Ulua River, which enables the Interoceanic Railway, the Caribbean Sea terminal of which is at Puerto Cortes, to be extended to the Gulf of Fonseca on the Pacific, thereby encouraging the industrial and commercial development of a rich and partly untouched zone of the Republic. Another typical construction along a different line of activity is the beautiful Manuel Bonilla Theater erected in Tegucigalpa, and which is acknowledged by competent critics to be one of the best representatives of modern architecture now existing in Central America. ——The Antigua Gold Copper Co., which operates a MINE at Minas de Oro, department of Comayagua, produces ores which contain, in addition to copper, a value in gold and silver of $5 gold per ton. The company has erected on this property an Allis-Chalmers mill provided with three crushers and having a capacity for treating 30 tons of ore per day, and has also in operation three Huntington mills. The New York & Honduras Rosario Mining Co. has completed its new cyanide plant and has erected a mill with a capacity for handling

250 tons of ore daily.——According to press reports many of the plantation owners of coastal lands are becoming more and more interested in the cultivation of TOBACCO AND RICE and are inclined to curtail the area planted to bananas, inasmuch as during the four years preceding 1916 there were light harvests of this fruit in some of the principal banana-producing districts of the country. The banana crop throughout the entire Republic for the present year is reported to be very large, and good prices are being obtained for the fruit. In the La Ceiba district it is planned to use three boats in the transportation of bananas to New Orleans.——Manuel Aguilar H., a Honduran student who was awarded a SCHOLARSHIP in the Practical School of Agriculture at Santiago de Chile, has completed with honors the first year's work of the four years' course required by that institution.——More than 300 laborers were recently employed to complete the work on the Rio Frio section of the Comayagua HIGHWAY, which it is proposed to put in first class condition as early as possible for mule and wagon traffic.——The Code of Public Instruction of Honduras prescribes that teachers in the public schools who have served in that capacity for 10 consecutive years are entitled to have their CHILDREN EDUCATED at the expense of the State.——The reconstruction of the Guangololo AQUEDUCT has been ordered by the board of encouragement (fomento) of La Paz, Honduras, for the purpose of providing that city with a supply of potable water.——Dr. Ernesto Argueta has established in the department of Olancho, which is one of the richest and most extensive political divisions of the Republic an ENCOURAGEMENT BOARD to aid in the development of that section of the country.——The new FIRE INSURANCE LAW enacted by congress on January 27 of the present year went into effect on April 18 last. This law prohibits the payment of fire insurance losses to persons undergoing criminal proceedings on the charge of arson until the respective cases have been settled in the courts.

MEXICO

HENEQUEN MOLASSES is the name of a stock-food substance obtained from the pulp of the henequen leaves after the fiber has been extracted, and is extensively used in Yucatan and other parts of Mexico as forage for cows. This useful sirup, made from what was formerly considered a worthless by-product of green henequen bagasse, is not only a rich and nourishing food for stock, but is also a great stimulant of the lacteal glands of milch cows which increases

the quality and flow of milk and by actual tests has been found superior to any other class of forage hitherto used in Mexico for this purpose. With the utilization of fresh henequen bagasse for the extraction of henequen molasses and the dry bagasse for fuel, it would seem that every part of the agave rígida or sisal plant can be made to serve a useful industrial purpose, thereby eliminating all waste in its elaboration.——The FIRST PEDAGOGICAL CONGRESS, which met during the middle of May in Hermosillo, State of Sonora, recommended a more efficient public-school system and a wider extension of same, especially in the rural districts of that Commonwealth. While Gen. Elias Calles was governor of Sonora a million pesos gold was appropriated by the State legislature for educational purposes, and public instruction was encouraged and developed in such a way as to make the Commonwealth of Sonora one of the foremost members of the Mexican Union in educational advancement.——The general management of the Government railways of Mexico has reduced by 50 per cent the transportation RATES ON FLOUR, corn, and beans in order to encourage the shipment of these articles from the farms and villages to the Federal Capital and the interior cities of the Republic.——The Bureau of Mines and Petroleum has issued a circular requiring the payment of an INSPECTION TAX on and after June 1, 1916, amounting to 300 gold pesos by all persons, companies, or corporations engaged in any branch of the oil industry which are now inscribed or which may hereafter register in that Bureau, with the exception of those exempted from said payment under the terms of concessions or prior contracts. In 1915 the production of oil, in round numbers, was 35,000,000 barrels of 42 gallons each, as compared with 26,000,000 barrels in 1914. The State geologist of West Virginia, who made an extensive study of the Mexican oil fields, estimates that the Mexican and Huasteca companies have an undeveloped oil supply of over 5,000,000,000 barrels in the Tampico district, and that the other petroleum regions of the Republic have latent oil deposits containing over 8,000,000,000 barrels, and that there is crude oil enough in Mexico to afford a daily supply of 1,000,000 barrels for a period of about 40 years. The Tampico oil fields produced in March and April last 1,383,978 and 1,262,987 barrels, respectively, all of which with the exception of 70,150 barrels was crude oil. Press reports state that the Mexican Petroleum Co. has contracted with an American steamship line for the sale of 10,000,000 barrels of petroleum to be delivered monthly, beginning with January, 1917.——The Bureau of Telegraphs of the Mexican Government reports that the towers of the WIRELESS stations at Veracruz, Acapulco, and Merida have been completed. The apparatus is being installed in these respective stations and it is expected that they will be ready for use in a

short time. The wireless station at Guaymas is being completed and will soon be ready for operation.——An executive decree has been issued allowing the free importation of CATTLE for breeding purposes, and permitting importers to ship out of the country Mexican cattle equal in number to those imported, provided the exportation and importation are made at the same time.

NICARAGUA

The municipal council of Bluefields has passed a STOCK ORDINANCE prohibiting domestic animals, such as horses, cattle, goats, and hogs, to stray within the city limits, and all such stock encountered will be caught and sold at auction within three days if the owners fail to reclaim same and pay a fine of 1 cordoba for each stray animal, with the exception of hogs, which are unredeemable and will be sold by the municipal authorites within 48 hours after being detained.——The Senate of the Congress of Nicaragua has ratified the ATLANTIC RAILROAD CONTRACT and sent same to the Chamber of Deputies, which body has ordered it printed.——Judge J. F. Rodriguez, who was until recently a judge of the criminal court of the district of Bluefields, has been appointed civil and MINING JUDGE for the Pis Pis district with headquarters at Tunky. Judge Rodriguez is highly esteemed in mining circles for his broad-minded and liberal attitude in all that pertains to the development of the mining interests of the country.——Dr. Möller, the physician in charge of the Rockefeller HOOKWORM Bureau in Nicaragua, has solicited the aid of the public in exterminating mosquitoes, which are reputed to be the cause of the malady. This Bureau and its branches, of which there are a number in the Republic, gives its medicines and the services of its physicians free of charge. According to press reports the port of Corinto, owing to vigorous measures taken by the local medical and civil authorities, in cooperation with the hookworm bureau, is now free of mosquitoes.——Bishop John Taylor Hamilton, vice president of the Moravian Mission, is visiting the MISSIONS of that church in Nicaragua, the first of which was established on the East Coast of the Republic about 70 years ago. Waldemar Richard, financial secretary of the Moravian Mission Board, accompanies the bishop.——The BLUEFIELDS FRUIT & STEAMSHIP CO. has removed its offices from Rama to Providence, and in future will repair its vessels at Schooner Cay instead of at Old Bank.——The Government of Nicaragua has submitted to Congress an IMMIGRATION BILL which provides that every foreigner who desires to enter the country shall

be possessed of at least 50 cordobas (cordoba = $1), regardless of whether he comes as an immigrant, on business, in transit, or for any other cause. The laws of Nicaragua prohibit the entry of Chinese into the Republic. This bill forbids admittance to Arabs, Turks, Syrians, Armenians, and gypsies of any nationality, but does not apply to persons of these races already permanently established in the country who leave Nicaragua and return, provided they secure the necessary passports. Foreigners who are either deaf, dumb, blind, idiotic, insane, or who are afflicted with leprosy, yellow fever, or any contagious disease will be refused admittance into the Republic, but an exception will be made in the case of idiots, imbeciles, the blind, deaf, and dumb who can show that they have a sufficient competence to live upon without becoming a public charge. Immigrants who enter the country as such must be in good physical condition. The entry of persons who have been convicted of crime, or escaped criminals, is barred. The authorities of the different ports are required not to permit the temporary landing of passengers who are not entitled to entry under any of the restrictions mentioned in the foregoing. Travelers in transit may pass through the Republic provided they comply with the provisions of the law.——A recent legislative decree prohibits the issuance to employees for services rendered of COUPONS or documents representing merchandise deliverable to bearer. In future remuneration for services must be paid to workmen in the legal tender of the country, and outstanding coupons and other documents of this kind issued before the promulgation of the decree are required to be redeemed in cash.——Press reports from Managua state that an executive order will probably soon be promulgated permitting medical inspectors appointed by the governors of the departments to sign the certificates required by the United States on shipments of HIDES consigned to that country.

The prospects for a bountiful COFFEE CROP during the present year in the vicinity of David are most promising. The coffee trees in this section of the Republic bloom in May, and the berries are now so far developed that it is estimated that the production this season will approximate 900,000 pounds, or about 400,000 pounds more than the crop usually harvested in normal years. The coffee growers of the district referred to expect to receive for this year's crop about $100,000. The district is well located as to markets, and the prices obtained by plantation owners vary from 10 to 15

cents a pound, according to the quality, uniformity, color, and appearance of the beans.——The mayor of the city of Colon has issued a decree prohibiting the carrying of FIREARMS within the limits of the municipality unless specially authorized by the municipal authorities.——The attention of foreign settlers in the Boquette Valley of Panama has been called to the excellent opportunities existing there for the growing of VEGETABLES. Coffee has hitherto been the favored crop in that zone of the Republic, but experiments have demonstrated that vegetables of the finest quality can be grown in profusion and that there is a steady and growing demand for same the year around. Cabbage of fine texture and large size develop in this valley, and potatoes and other garden vegetables grown in the southern part of the United States thrive in this favored section of the Panama Republic. With the opening of the Boquette Railway to traffic, a practically unlimited market will be available to the vegetable growers of this section in supplying the needs of the City of Panama and in preparing shipments for export.——On October 12 of the present year FLORAL GAMES are to be celebrated in Panama City in honor of the three hundredth anniversary of the death of Miguel de Cervantes, author of the immortal Don Quixote. A first prize, made up of a flower and a gold medal, a second prize, consisting of a silver medal, will be awarded to the author of the best poem submitted on any subject, and a third prize of $100 to the author of the best poem on Cervantes. These poems must be written in the Spanish language and submitted by a resident of Panama.——The Electric Bond & Share Co. is negotiating for the purchase of the stock representing the properties of the PAN AMERICAN CORPORATION in the cities of Panama and Colon. The Panama Telephone Co., the Panama Power and Ice Plant, and 953 shares of the stock of the electric plant and ice company of Colon are included in the transaction. It is understood that a cash consideration of $1,900,000 and 2,500 shares of the stock of the corporation is offered.——The first passenger TRAIN FROM DAVID TO BOQUETTE, a distance of 56 miles, carrying the President of the Republic and his party, made the round trip on April 21 last in about four hours. The trains now run over the David to Concepcion branch, a distance of 18 miles, and from David to Pedregal, the Pacific terminus of the main line.——A corporation entitled the "Silk Fiber & Manufacturing Co.," of which J. R. S. Nichols is president, has been organized in St. Louis, Mo., for the purpose of utilizing the pita or AGAVE FIBER extracted from a wild plant found in great abundance in certain sections of Panama. Articles, such as hammocks, made from this fiber are very strong and durable and are little injured by rain or excessive moisture. The fiber possesses

attributes that fit it for the manufacture of a fine quality of vegetable silk. Up to the present time experiments with this fiber have been very satisfactory and prove that it is suitable for use in the manufacture of various kinds of textiles.

PARAGUAY

According to data contained in a message which President Eduardo Schaerer read to the National Congress on April 1 last, the INTERNATIONAL COMMERCE of the country in 1915 was 8,022,060 pesos gold (gold peso = $0.9648), consisting of imports 2,405,888 and exports 5,616,172 gold pesos.——The Asuncion branch of the Bank of Spain and America has been acquired by a group of Paraguayan capitalists and reorganized as an independent institution under the name of the BANK OF SPAIN AND PARAGUAY. The first issue of stock, 10,000,000 pesos paper, in the new bank, made in May last at Asuncion, was oversubscribed. The bank will have a capital of 20,000,000 pesos paper.——The plans for the new PORT WORKS, submitted by the Construction Engineering Finance Co., have been accepted by the Paraguayan Government.——The constitution of the new STUDENTS' FEDERATION, which is composed of undergraduate associations of the National College and of the University at Asuncion, was presented for adoption on May 10, 1916.——A NATIONAL SCHOOL OF AVIATION to be in charge of the well-known Paraguayan aviator, Pettirossi, and to be located at Asuncion, has been proposed. Efforts are now being made to secure the necessary funds for this purpose.——The CATTLE ASSOCIATION (Sociedad Ganadera) of Paraguay has now under consideration a project for animal sanitation which will be submitted to the National Congress for consideration.——It is estimated that the new RICE CROP of the Republic for the present year will be about 1,500 metric tons of cleaned rice.——The President of the Republic, acting in accord with the provisions of the budget law, has permitted the free importation of 200 tons of SUGAR. It is understood that when sugar is brought into the country free of duty under a special order of this kind that same is to be retailed to the public at a reasonable price, not in excess of the one agreed upon at the time of requesting the free importation.——The machinery for the Rickard COLD-STORAGE establishment at Asuncion is soon to be shipped from the United States. This machinery is of the most modern and improved type, and when set up and put in operation will make of

that establishment one of the best equipped and up-to-date cold-storage plants in South America.——Elias Thomas has been appointed manager of the PARAGUAYAN CENTRAL RAILWAY and entered upon the discharge of his duties on April 9 last.——The Cattle Association of Paraguay (La Sociedad Ganadera del Paraguay) has appointed the following CORRESPONDING MEMBERS for Brazil: Dr. Assis Brasil, Dr. Carlos Prates, and Dr. J. B. Paulo Nogueira.——Representatives of the "Partido Colorado" (Republican party), a political organization of Paraguay, with headquarters at Asuncion, have decided to establish a DAILY NEWSPAPER in that city. The management of the paper has been offered to Juan O'Leary.——Commencement on the construction of the first section of the PORT WORKS at Asuncion is announced to begin early in July of the present year.——The Nueva Germania AGRICULTURAL COLONY, one of the most prosperous foreign colonies of the Republic, has petitioned the National Government for the establishment of a public school in the colony for the benefit of the children of the colonists.

PERU

According to El Bien Agricola of Chiclayo, recent explorations made at a place called Huaca Pintada situated between the districts of Tucume and Illimo, resulted in the discovery of INCA RUINS of great importance which the authorities have ordered to be preserved as carefully as possible in their original state.——The National Government has ordered the construction of a SUBMARINE STATION adjacent to the Naval School at Callao and the acquisition of a tank steamer for supplying water to the ships of the Peruvian squadron.——The Government declared the 16th of May a legal holiday for the city of Cuzco for celebrating the ceremonies attendant upon the unveiling of a MONUMENT erected in memory of the Peruvian patriot, Commander Ladislao Espinar.——On May 3, the FINANCIAL AND COMMERCIAL COMMISSION sent by the United States Government to Peru, Bolivia, and Chile arrived at Lima. Its purpose is to promote closer business relations between the United States and those countries. Mr. Ernest H. Wands, chairman of the delegation, is president of the American International Corporation of New York.——Drs. G. Ortega and Pimentel, Carlos Velarde and Julio Figueroa have been chosen DELEGATES OF PERU to the Congress of Social Sciences which will be held next July at Tucuman in connection with the centennial celebrations;

Dr. César Sánchez Aizcorbe will represent Peru at the Bibliographical and Historical Congress and American Childrens' Congress to be held at the same time at Buenos Aires.——To prevent fishing boats and other vessels from visiting the GUANO-PRODUCING ISLANDS and frightening away the birds, the National Government has passed a law that no boat can approach any closer than within a mile of the islands. Any boats visiting the islands can only anchor at special places already prepared for that purpose and must carry permits signed by the captain of the port who has jurisdiction over the island to be visited. Boats carrying provisions, correspondence, etc., are subject to the same restrictions.——A presidential decree of May 3 revokes that of October 16, 1914, and reestablishes in full force article 1 of the decree of June 23, 1897 which authorizes SUPERVISION OF INSURANCE COMPANIES by the director of Public Credit.——On April 22 the tricentenary of the death of the EMINENT PERUVIAN HISTORIAN, Garcilaso de la Vega, was celebrated throughout Peru. According to La Prensa, of Lima, he sprung from two illustrious races and from two families equally eminent, his parents being Carcí-Lasso de la Vega, a Spanish captain, and Princess Isabel Chimpu Ocllo, granddaughter of the Inca, Túpac Yupanqui. The cities of Lima and Cuzco paid special homage to the memory of the celebrated author of the "Royal Commentaries." The University of San Marcos observed the occasion by brilliant addresses from its most eminent professors in eulogy of the celebrated historian. Cuzco, where Garcilaso was born, celebrated the event with impressive ceremonies. All the Peruvian press published special articles eulogizing the memory of the great historian. ——In celebration of the fiftieth anniversary of the naval battle between the Peruvian land batteries and a Spanish squadron, on May 2[illegible] a MONUMENT was inaugurated at Cajamarca in memory of the hero of the battle, José Gálvez, who was then Minister of War and Marine. The President of the Republic presented the city with a commemorative medal. At a point called Chucuito, at the port of Callao, was also laid on that date the corner stone of a monument to be erected on the spot occupied by the batteries in memory of the event.——According to official data, the REVENUE DERIVED FROM THE NEW TAXES during the first four months of 1916 aggregated 98,674 Peruvian pounds, distributed as follows: Sugar, 36,277; wool, 3,073; cotton, 2,908; hides, 2,518; minerals, 50,475; and petroleum, 3,423 pounds.——The banks and commercial houses of Lima have published notices that in future their OFFICES WILL CLOSE at 12 o'clock on Saturdays.——A new paper is soon to be published in Lima under the title of El Tiempo and will be directed by the Peruvian journalist, Mr. P. Ruiz Bravo.

SALVADOR

The Executive Power has approved the amendment to the by-laws of the OCCIDENTAL BANK authorizing an increase of the capital of that institution to £225,000 (2,500,000 pesos silver) and the issuance of bank notes up to 5,000,000 pesos.——A recent law of the National Legislative Assembly removes the duty on PRINTING PAPER imported into the Republic.——With the object of avoiding the interruption of traffic over the national highways during the rainy season, the President, acting on the recommendation of the Minister of Fomento, has decided to order from the United States two or more ROAD ROLLERS, with their accompanying stone-crushing machines and all other accessories that may be necessary for the construction and repair of public highways in such a manner as to insure the solidity, durability, and style of construction which now obtain in the best types of macadamized roads in the United States. The Government proposes to build a network of public highways throughout the country so as to encourage, in so far as possible, the development of the agricultural, industrial, and mining resources of the country.—— The National Legislative Assembly has repealed paragraph 8 of article 1 of the legislative decree of August 7, 1900, which imposes an annual license tax of 10 pesos on ATTORNEYS AT LAW who desire to practice their profession in the Republic.——La Prensa, a daily newspaper of the city of San Salvador, announces that a Mexican promoter has arranged to establish a FORTNIGHTLY TRANSPORTATION SERVICE between Acajutla and the ports of Mexico. One of the steamers, the *Pintope*, a vessel of 500 tons burden, will soon sail from San Francisco, Cal., to engage in this service. According to the same authority, the American International Corporation of New York has bought of the Royal Dutch West India Mail Co. three large steamers, the *Venezuela*, the *Colombia*, and the *Ecuador*, to ply between ports of Central America, Panama, and various ports on the Caribbean Sea. These vessels will carry both freight and passengers.——Plans have been completed for supplying Zacatecoluca with potable water from the Apanta River, 5½ miles distant and at an elevation of 65 meters above the city, thereby enabling the water to be delivered by gravity pressure. Construction of the AQUEDUCT will begin as soon as the plans are approved by the department of fomento.——The Executive has promulgated a decree making the road which runs from San Salvador to Panchimalco and Rosario de Mora a NATIONAL HIGHWAY.——At the request of the War Department the minister of public instruction has arranged to introduce MILITARY TRAINING

in the primary and secondary schools of the country.——The Executive Power has notified JOINT STOCK COMPANIES doing business in the Republic that they are required to send a report every six months to the inspection office, giving an account of their operations, including a statement of profit and loss, dividends declared, and such other information as may be requested by the said office.——Francisco Moran and Francisco Luarca, of the Normal Institute for Boys of San Salvador, have obtained, through competitive examination, SCHOLARSHIPS in the Normal School at Heredia, Costa Rica, offered by the Government of that country.——Rafael Urrutia, in cooperation with the Government of Salvador, has arranged to establish a modern APIARY on one of his plantations to be used for educational purposes and in the development of that industry in the Republic.——According to data published by El Cronista of San Salvador, the banks of the Republic had COIN AND BANK NOTES in circulation on December 31, 1915, as follows: Agricultural Commercial Bank, silver 872,844 pesos, bank notes 1,772,626 pesos; Occidental Bank, 1,762,280 pesos silver, bank notes 2,871,243; Bank of Salvador, silver 1,809,792 and bank notes 3,259,165.——In 1915 the National Government expended for PUBLIC INSTRUCTION 998,012 pesos, as compared with 957,194 pesos in 1914 and 882,047 pesos in 1913 (peso = $0.3537).——Dr. Alonso Reyes Guerra has been appointed director of the CENTRAL INSTITUTE FOR BOYS in the city of San Salvador.

URUGUAY

The First NATIONAL MEDICAL CONGRESS of Uruguay was held in Montevideo from April 9 to 16, inclusive, 1916. Dr. Gerardo Arrizabalaga was chosen president of the Congress. The deliberations of the Congress included discussions and papers covering the different fields of medicine, and recommendations were made for more efficiently combating such diseases as cancer, typhus, tuberculosis, etc. The Second National Medical Congress is to be convened in Montevideo in 1919 under the auspices of the Medical Society of the Federal Capital.——The Northern Rail and Tramway has decided to use oil-burning engines in its service from La Barra to Santa Lucia. This is the first line in Uruguay to use oil as a fuel.——The committee appointed to select a design for the new SILVER COIN which the Republic of Uruguay proposes to mint and place in circulation in the near future has accepted the model submitted by Bernabi Michelena with the understanding that certain

changes be made or that the design be ratified by the President of the Republic. The Chief Executive later approved the design as presented by Sr. Michelena.——The CORDIER FOUNTAIN, which is planned to be unveiled on August 25 next in Independence Plaza, Montevideo, was made in Paris. The French sculptor, whose design was chosen by competition from numerous plans submitted to the selecting jury, was awarded a prize of 25,000 pesos. The fountain is one of the finest in South America.——The new RAILWAY STATION at Trinidad is reported to be the most beautiful and best equipped station, outside of the federal capital, in the Republic.——A MONUMENT is to be erected in the national capital to Zabala, the founder of Montevideo. Funds amounting to about 40,000 pesos have been raised for this purpose by popular subscription, and arrangements are to be made to select plans by a competitive contest.——Deputy Ramon T. Sonora has introduced a bill prohibiting the sale of drugs by pharmacists of national or private hospitals to the public, but allowing the same to be furnished gratuitously to the needy and to charitable institutions. Pharmacists are also forbidden to sell specialties, except on the prescription of a physician, unless same are included in the free list.——The municipal government of the city of Montevideo is planning, in cooperation with the department of public works and industries, the establishment of a large PACKING HOUSE having commodious cold-storage departments and equipped in the most modern and scientific manner. Plans for the construction of this municipal packing house have been submitted to the Department of the Interior of the Uruguayan Government by a North American firm.——An EXPOSITION OF ARTIFICIAL FLOWERS was opened to the public at the Parque Hotel in Montevideo on April 7, 1916, with 120 exhibits. Gold, silver, and bronze medals are to be awarded the successful exhibitors.——The department of public works has instructed the hydrographic office of the Uruguayan Government to make a definite survey and prepare plans for utilizing the energy produced by the Quegnay River falls, and for the construction of an ELECTRIC power house.——A Government bill has been introduced into the General Assembly prohibiting the importation by private persons of such ARMS AND MUNITIONS as may be declared by decree to be for the exclusive use of the national army and navy. The measure prescribes that a fine of 60 pesos, or imprisonment for 15 days, shall be imposed on private persons found in the possession of arms of the type and caliber used by the national forces, and ammunition for same is subject to confiscation.——The SALVATION ARMY in Montevideo has provided employment for a limited number of persons in the federal capital in the work of sorting refuse and extracting from same paper, old iron, furniture,

etc. The proceeds of the sale of these articles are used for charitable purposes.——A bill exempting GRAPE JUICE from the pharmaceutical stamp tax and all other internal taxes has been passed by the House of Deputies.

VENEZUELA

On April 28 last the regular session of CONGRESS for the present year assembled in the national capital. An important message was read by Dr. V. Márquez Bustillo, Provisional President of the Republic, reviewing the principal events of his administration during the past year. The Executive states that the Government has taken special pains to further the interests of the people in every branch of the public service, and especially in the promotion of national highways and means of communication, continuing in this manner the work of supplying the Republic with modern wagon roads, the construction of which was so wisely commenced by Gen. Gomez, and which it is proposed to carry to a successful termination, since this is one of the most practical and effective means for encouraging the development of the country. As to international relations the chief executive states that these are most pleasant and amicable with all of the civilized nations of the world and in entire accord with the traditional courtesy of the Venezuelan Government in its dealings with foreign powers.——Recently a company was organized in Caracas to engage in a number of industrial enterprises, one of which was the manufacture of wicker and other FURNITURE out of native woods by the use of European methods. Samples of the wicker furniture of this company on exhibition in the federal capital rival in appearance, finish, strength, durability, and general utility the same class of merchandise imported from abroad, and show that the factory is equipped with modern machinery, and that the methods employed are equal to those used in the best equipped European factories.——The governor of the State of Zulia promulgated a decree on May 1 last providing for PAVING and constructing sidewalks on the principal streets of the city of Maracaibo. Representatives of the business interests of the capital of the State of Zulia are cooperating with the governor, and have donated for this purpose 3,050 barrels of cement, and are aiding him in every way possible in carrying the work to a successful termination.——A MONUMENT to the memory of Simon Bolivar, the liberator, made by the Venezuelan artist, Luis B. Castillo, was unveiled in Independence Square in the city of Caucagua on April 8, 1916. This beautiful work of art is the first of its kind to be erected

in the Republic entirely out of native marble.——The jury in the competitive POETICAL AND SHORT-STORY CONTEST held under the auspices of El Nuevo Diario, a daily newspaper of Caracas, in commemoration of the 19th of April and to stimulate the study of the fine arts in the Republic, awarded the prize for the best poem to Dr. J. T. Arreaza Calatrava, and the best story prize to Rafael Bolivar Coronado.——Carlos Reyes Saldivia, with the approval of the Philatelic Society of Venezuela, has just compiled and published a catalogue of VENEZUELAN STAMPS, with a history of the different issues of stamps of the Venezuelan Government from 1858 to the present time, together with decrees, restamping orders, and similar information of interest to stamp collectors.——The Industrial Herald of Caracas announces that a group of North American capitalists has offered $6,000,000 gold for the COPPER MINES belonging to the Cumaragua Mining Co.——The AGRICULTURAL & INDUSTRIAL CO. of the city of Merida has been organized to engage in the growing of coffee, sugar cane, the importation and exportation of merchandise, and the buying and grinding of wheat, etc.——About the middle of last April, according to a news item of El Universal, a daily newspaper of Caracas, the Dutch steamer *Nikerni* sailed from the port of Tucacas with a cargo of 1,200 tons of COPPER ORE, valued at 120,000 bolivars, belonging to the South American Copper Syndicate.

UNITED STATES REPRESENTATIVES IN THE LATIN AMERICAN REPUBLICS

AMBASSADORS EXTRAORDINARY AND PLENIPOTENTIARY

Argentine Republic	Frederic J. Stimson, Buenos Aires.
Brazil	Edwin V. Morgan, Rio de Janeiro.
Chile	Joseph H. Shea, Santiago.[1]
Mexico	Henry P. Fletcher, Mexico.[1]

ENVOYS EXTRAORDINARY AND MINISTERS PLENIPOTENTIARY

Bolivia	John D. O'Rear, La Paz.
Colombia	Thaddeus A. Thomson, Bogota.
Costa Rica	Edward J. Hale, San Jose.
Cuba	William E. Gonzales, Habana.
Dominican Republic	W. W. Russell, Santo Domingo.
Ecuador	Charles S. Hartman, Quito.
Guatemala	William H. Leavell, Guatemala City.
Haiti	A. Bailly-Blanchard, Port au Prince.
Honduras	John Ewing, Tegucigalpa.
Nicaragua	Benjamin L. Jefferson, Managua.
Panama	William J. Price, Panama.
Paraguay	Daniel F. Mooney, Asuncion.
Peru	Benton McMillin, Lima.
Salvador	Boaz W. Long, San Salvador.
Uruguay	Robert E. Jeffery, Montevideo.
Venezuela	Preston McGoodwin, Caracas.

CHARGÉ D'AFFAIRES

Chile	George T. Summerlin, Santiago.

[1]Appointed.

UNITED STATES
MEXICO
GUATEMALA
HONDURAS
NICARAGUA
Caracas
VENEZUELA
Bogota
COLOMBIA
GUIANA
ECUADOR
Manaos
Santarem
SOUTH
BRAZIL
Iquitos
Porto Velho
Cuzco
BOLIVIA
AMERICA
Oruro
Sucre
Potosi
Goyaz
Diamantina
Ouro Preto
Sao Paulo
Asuncion
Curitiba
Tucuman
Corrientes
San Juan
Cordoba
Mendoza
San Luis
Rosario
Buenos Aires
La Plata
Neuquen
Puerto Montt
ATLANTIC
OCEAN
PACIFIC
OCEAN
Caribbean Sea
Rio Negro
Amazon
Parana
Paraguay
Uruguay
Pampas
Chaco
Mexico
Guadalajara
Monterey
Chihuahua
Durango
Phoenix
El Paso
Dallas
Austin
Houston
New Orleans
Chicago
New York
Washington
Boston
Philadelphia
Pittsburg
Cincinnati
St. Louis
Kansas City
Omaha
Denver
Salt Lake City
San Francisco
Portland
Seattle